

Advertisement

The
"HARDCO"
TENNIS COURT

The only hard court
which is entirely free
from the objections
to the
ordinary hard court

Once the "Hardco" Court is laid it
requires no further attention. Non-
stripping, non-slippery, accurate and
resilient. Unaffected by sun and frost

CONSTABLE HART & Co Ltd

Head Office:

BROADWAY BUILDINGS, BROADWAY, WESTMINSTER, S W 1



Hgc

THE WAR OFFICE,
31st July. 1931

CONTENTS

CHAPTER I BATTLE

	PAGE
1 General considerations	1
2 The phases of the battle	5
3 General principles regarding the employment of infantry in battle	9
4 Infantry weapons	13
5 Fire its organization application and co ordination	23
6 Use of ground	26
7 Command and intercommunication	28
8 Co-operation with the other arms	33

CHAPTER II ATTACK

9 The gaining of contact	52
General considerations regarding the method of attack and its conduct	56
1 The battalion in the attack	60
2 The rifle company in the attack	81
The rifle platoon and section in the attack	86
The machine-gun company in the attack	90
15 The machine gun platoon and section in the attack	92
Further considerations for the attack on an organized trench system	95
17 Consolidation of a captured point on Raids	99
	101

CHAPTER III

DEFENCE

src	PAGE
19. General considerations	103
20. The selection and organization of a defensive position	108
21. The battalion in defence	119
22. The machine-gun company in defence	132
23. The machine gun platoon and section in defence	134
24. The rifle company in defence	137
25. The rifle platoon and section in defence	141
26. The role and employment of reserves	144
27. Further considerations in protracted defence	148
28. Reliefs	149

CHAPTER IV

PROTECTION

29. General principles applicable to all forms of protection	153
30. Advanced guards	157
31. Flank guards	161
32. Rear guards	163
33. Protection at rest	177
34. Protection from aircraft	183

CHAPTER V

FIGHTING IN CLOSE COUNTRY WOODS,
AND VILLAGES

SEC		PAGE
35	The influence of close country on offensive and defensive operations	191
36	The attack in woods	194
37	The defence in woods	198
38	The attack on villages	199
39	The defence of villages	201

CHAPTER VI

NIGHT OPERATIONS

40	General principles	203
----	--------------------	-----

NIGHT MOVEMENTS CARRIED OUT BEHIND PROTECTIVE
TROOPS

41	General considerations	204
42	Conduct of night marches	205

NIGHT MOVEMENTS WHEN THE FORCE IS RESPONSIBLE
FOR ITS OWN PROTECTION

43	Night marches	206
44	Night advances	207
45	Night withdrawals	209

NIGHT ATTACKS

46	General considerations	210
47	Organization and conduct of night attacks	213

CHAPTER III

DEFENCE

SFC	PAGE
19. General considerations	103
20 The selection and organization of a defensive position	108
21 The battalion in defence	119
22 The machine gun company in defence	132
23 The machine-gun platoon and section in defence	134
24 The rifle company in defence	137
25 The rifle platoon and section in defence	141
26 The role and employment of reserves	144
27 Further considerations in protracted defence	145
28 Reliefs	149

CHAPTER IV

PROTECTION

29 General principles applicable to all forms of protection	153
30 Advanced guards	155
31 Flank guards	164
32 Rear guards	166
33 Protection at rest	177
34. Protection from aircraft	180

CHAPTER V

FIGHTING IN CLOSE COUNTRY, WOODS,
AND VILLAGES

SEC		PAGE
35	The influence of close country on offensive and defensive operations	191
36	The attack in woods	194
37	The defence in woods	198
38	The attack on villages	199
39	The defence of villages	201

CHAPTER VI

NIGHT OPERATIONS

40	General principles	203
----	--------------------	-----

NIGHT MOVEMENTS CARRIED OUT BEHIND PROTECTIVE
TROOPS

41.	General considerations	204
42	Conduct of night marches	205

NIGHT MOVEMENTS WHEN THE FORCE IS RESPONSIBLE
FOR ITS OWN PROTECTION

43	Night marches	206
44	Night advances	207
45	Night withdrawals	209

NIGHT ATTACKS

46	General considerations	210
47.	Organization and conduct of night attacks	213

CHAPTER VII

AMMUNITION SUPPLY

SEC		PAGE
48	General principles	219
49	System of distribution in front of railroad	219
50	The S A A section of the divisional ammunition company	220
51	The issue from and replenishment of the battalion S A A vehicles and pack animals	221

CHAPTER VIII

WORKING PARTIES AND TASKS

52	Field engineering	225
53	The officer in charge of the work	226
54	The officer in command of the working party	227
55	The officer in command of the covering party	227
56	Action in case of attack	228
57	Demand for and distribution of working parties	229
58	Distribution in the work	229
59	Allotment of tasks	230

CHAPTER IX

ASSAULT BRIDGING

60	General considerations	231
61	Reconnaissance	232
62	Covering parties	233
63	The bridge forming point	233
64	Carrying the bridge forward	234

CHAPTER IX—*continued*

SEC		PAGE
65	Launching the bridge	235
66	Action subsequent to launching	235
67	Traffic control	236
	INDEX	237

PLATES

(Following page 260)

- No I —Possible formation for a battalion in attack
- II —Possible formation for a battalion in attack
- III —Possible formations for a rifle company in attack
- IV —Organization of a defensive position in mobile warfare



CHAPTER I BATTLE

1 *General considerations*

1 Conditions of battle vary according to the climate

forth in Field Service Regulations Vol II on which this book is based

2 The aim of the Army in war is—in co-operation with the Navy and Air Force—to break down the resistance of the enemy's armed forces in furtherance of the approved plan of campaign. This can be achieved only

by battle Battle includes offensive and defensive action

3 In order to achieve victory a commander must, sooner or later assume the offensive

The offensive spirit should therefore be inculcated to the utmost in all ranks but it must be remembered that it is not possible to attack on every occasion

4 The aim of the defensive battle is to meet and defeat the enemy's offensive as a preliminary to the resumption of offensive action But the defensive alone, even when successful can never lead to decisive victory The destruction of the enemy's armed forces by which alone decisive victory can be won demands movement in the form of a counter offensive

5 *Surprise* is a most effective and powerful weapon in war It places in the hands of the commander who achieves it an advantage which goes far to counter-balance any superior resources which the enemy may possess

Secrecy ensured either by concealing preparations or by disguising intentions the use of new weapons or a novel use of existing weapons, and rapidity of execution, are among the principal measures by which superiority can be produced by the use of surprise

To guard against surprise by taking proper measures for security is therefore the first duty of every commander in the field.

Information as to the positions and movements of the enemy affords the best guarantee against surprise. For this reason touch should never be lost, once it has been established, unless to maintain it would endanger

the accomplishment of the task. Having obtained all possible information a commander should endeavour to avoid the obvious, adopt the unexpected, and ensure that his plan and dispositions are elastic

6 Security is provided for by an efficient system of obtaining information and by suitable dispositions. Only if a force is secure can the commander retain liberty of action and the initiative

Information, both strategical and tactical, is obtained by aircraft, by mobile troops and armoured cars, and from other sources (prisoners, agents, inhabitants, etc.) Such information enables a commander to calculate the time at his disposal for the development of his plan without risk of serious interference by the enemy

In addition to the organization of the above means for obtaining information, security is provided for by the disposal of protective detachments between the enemy and the main body. These detachments are drawn from the troops to be protected, and are termed advanced guards, flank guards, rear guards, or outposts, according to the nature of the duties to be performed. They may be relatively weak if the enemy is at a distance, but are increased in strength as contact becomes imminent and their task consequently more difficult

In rear of the protective detachments the force should be so disposed that the commander can adapt his dispositions to the situation as it develops

7 An army achieves success by the combined efforts of its component parts. In order that true co-operation may be attained, each arm must understand that its activities are only a means to an end, and not in themselves the end. Hence, all officers must have knowledge

of the methods adopted in battle by arms other than their own

Co-operation during battle requires close personal touch between commanders of the various arms, this necessitates good arrangements for liaison and care in the selection of headquarters. It also requires constant reconnoissance in anticipation of eventualities. All units, whether in contact with the enemy or in reserve, must take steps to keep themselves in touch with the situation. This enables them to anticipate the trend of events and to act with promptitude when required

8 Battle is, above everything else a struggle of morale. Discipline and physical fitness by which the morale of a force can alone be maintained is the bedrock of all training. Where both sides are equally matched victory inclines in the end to the one whose morale remains the better and not necessarily to the force which has suffered less in casualties and material

The good fighting qualities of the individual infantry soldier depend on discipline, esprit de corps, skill at arms, confidence in his leader and training. Pride in himself and his unit both of which are inculcated by drill and smartness in the execution of all duties, have been proved by experience to lead to tenacity in battle

Success in battle depends on a sound and simple tactical plan and on the tenacity and perseverance with which it is carried through.

9 All ranks must be taught to realize that it is a disgrace to lay down their arms in the field. If ammunition is exhausted, recourse must be had

the enemy who may have taken up a defensive position or be also on the march. It is supplied with information during its forward move by mobile troops, and aircraft, behind the mobile troops each column is covered by its own advanced guard. As the two forces approach, the mobile troops on each side will come into contact and to some extent neutralize each other's power of obtaining information. The advanced guards will then have to fight for information. Movement across country may become necessary, but this causes the rate of forward movement to become slower and increased fatigue to the infantry, it is therefore advisable to move on roads as long as it is possible to do so without undue loss. Infantry commanders will adopt suitable formations to protect their units from air attack, artillery fire, or armoured fighting vehicles, the formation adopted must enable battalions to make the fullest use of cover whilst retaining the power of manoeuvre.

3 When the mobile troops are unable to make further progress the advance will be taken up by the infantry. The opposition met at this stage will usually be from detachments operating in advance of the enemy's main forces. Such detachments may have an offensive role, or one of delaying or holding.

The infantry task during this phase is to secure the information which the commander will require in order to form his plan to endeavour to locate the enemy's flanks, and to seize important tactical localities and view points. No effort must be spared to fulfil this task. Information concerning the enemy will usually be vague, and time will be of importance; leading commanders will therefore act quickly and boldly with such forces

as are immediately available to secure information as to the enemy's dispositions and probable strength. Eventually a time will come when the leading troops are no longer able to advance without a co-ordinated fire plan, they will find themselves held up along the whole front, and an organized attack will be necessary to make further progress.

4. The *attack* is dealt with fully in Chapter II.

As the defence will be disposed in depth the attack will consist of a series of operations to capture each of the localities which the enemy is defending.

An attack may therefore be defined as a methodical progression from objective to objective, or defended locality to defended locality, involving a succession of assaults until such time as the final objective is reached.

The assault is the final act in the capture of an objective. The moment for the delivery of the assault may either be fixed in accordance with a pre-arranged time programme or may manifest itself as the result of the definite establishment of fire superiority by the attacking troops.

5. *Consolidation* —The object of consolidation is —

- i To secure positions captured against counter attack
- ii To provide a base from which the further attack can be made
- iii To provide support for troops engaged in exploitation and rallying points on which they can fall back should they fail to gain a more advanced position

The method of carrying out consolidation and the proportion of troops which will be employed on it will vary according to the nature of the attack. Unless, however, the attack has a strictly limited objective, the duty of consolidation should not be allowed to prevent advantages being taken of opportunities offered by the demoralization of the enemy (Sec 17)

6 *Exploitation of success* —Active exploitation by the attacking troops will do much to prepare the way for organized pursuit by securing information and delaying the enemy's re-organization. The first essential will be to retain touch with the enemy and to maintain pressure on him. In the event of extreme demoralization of the enemy, exploitation should develop in organized pursuit, but for this mobile and fresh troops will be required.

7. *Defence* —The considerations which influence a commander in deciding to adopt the tactical defensive are discussed in Sec 19. The guiding principles of defence are firstly that fire must be organized to stop the enemy, secondly that the force must be disposed in depth, and thirdly that the numbers employed on the purely passive defensive must be kept as low as possible in order to set free the greatest possible numbers for eventual offensive action.

The framework of the defence will depend largely on the positions available for machine guns and on the areas necessary for artillery observation, in the selection of the position these points and the problem of anti-tank defence must be given full consideration. The importance of concealment is great. It is desirable that the position should afford full scope for the use of all weapons, nevertheless a long field of fire from rifle

company, localities is not essential, but a minimum of 100 to 150 yards is desirable

3. General principles regarding the employment of infantry in battle

1 The proper co-operation of all arms wins battles and enables the infantry to confirm victory. The main object of the infantry is to close with the enemy and destroy him

2 The movement of infantry on foot is slow and its range of action in a day is limited, in order to preserve its morale and maintain its fighting qualities unimpaired, these factors must be borne in mind

It is however, the most adaptable of all arms since it is capable of operating over almost any ground either by day or by night and can find cover more readily than the other arms

3 During movement, or when without cover, infantry is very vulnerable. Consequently, in carrying out its

particularly in close or enclosed country. In such circumstances or when the conditions are in other respects favourable infantry must not hesitate to attack without, or with only limited assistance from the other arms

But against organized resistance, when opposed to an enemy of good morale, armed with modern weapons

The method of carrying out consolidation and the proportion of troops which will be employed on it will vary according to the nature of the attack. Unless, however, the attack has a strictly limited objective, the duty of consolidation should not be allowed to prevent advantages being taken of opportunities offered by the demoralization of the enemy (Sec 17)

6 *Exploitation of success*—Active exploitation by the attacking troops will do much to prepare the way for organized pursuit by securing information and delaying the enemy's re-organization. The first essential will be to retain touch with the enemy and to maintain pressure on him. In the event of extreme demoralization of the enemy exploitation should develop in organized pursuit, but for this mobile and fresh troops will be required.

7 *Defence*—The considerations which influence a commander in deciding to adopt the tactical defensive are discussed in Sec 19. The guiding principles of defence are firstly, that fire must be organized to stop the enemy; secondly, that the force must be disposed in depth; and thirdly, that the numbers employed on the purely passive defensive must be kept as low as possible in order to reserve the greatest possible numbers for eventual offensive action.

The framework of the defence will depend largely on the positions available for machine guns and on the areas necessary for artillery observation, in the selection of the position these points and the problem of anti-tank defence must be given full consideration. The importance of concealment is great. It is desirable that the position should afford full scope for the use of all weapons; nevertheless a long field of fire from rifle

company localities is not essential, but a minimum of 100 to 150 yards is desirable

3. General principles regarding the employment of infantry in battle

1 The proper co-operation of all arms wins battles and enables the infantry to confirm victory. The main object of the infantry is to close with the enemy and destroy him

2 The movement of infantry on foot is slow and its range of action in a day is limited, in order to preserve its morale and maintain its fighting qualities unimpaired, these factors must be borne in mind

It is however, the most adaptable of all arms, since it is capable of operating over almost any ground either by day or by night and can find cover more readily than the other arms

the enemy. Against weak opposition infantry in the attack can produce such superiority of fire unaided, particularly in close or enclosed country. In such circumstances, or when the conditions are in other respects favourable, infantry must not hesitate to attack without, or with only limited, assistance from the other arms

But against organized resistance, when opposed to enemy of good morale, armed with modern

the co-operation of other arms will be essential, concentration of artillery fire and the co-operation of armoured fighting vehicles are the best methods of assisting the advance of infantry under these conditions. Superiority cannot be gained by mere increase of numbers as this does not increase fire power proportionately, but makes the utilization of cover more difficult, and entails ruinous losses.

Infantry cannot advance against even semi-organized resistance unless that resistance is kept in subjection by fire, nor must it be launched against unbroken wire obstacles.

4 Infantry is very vulnerable to the attack of armoured fighting vehicles and must therefore be so handled that whenever possible it can take advantage of adequate natural obstacles. Where these do not exist it has to rely on special weapons or be assisted by artillery.

5 Infantry once deployed and in action is definitely committed for the time being. It cannot like artillery, be diverted at short notice from its original task to a fresh one. It is therefore important that only the minimum numbers necessary to obtain the immediate object in view should be employed at the outset, the largest possible force should be kept in hand to exploit success and to meet unforeseen eventualities.

6 The fronts which may be allotted to infantry units cannot be made the subject of rules, they depend on the nature of the ground, the artillery support available, the morale and armament of the enemy, and on special factors such as fog and darkness.

The limiting factor is the control of the commander, be he platoon, company, battalion, or brigade commander, on no account must infantry units be so extended that efficient control is endangered.

Large frontages entail a corresponding reduction in depth, and smaller reserves. On the other hand a unit allotted a wide front need not necessarily employ more men in proportion, a wide front, wisely allotted, allows gaps and thus gives room for manœuvre.

Units in the attack against strong opposition are not necessarily helped by being allotted reduced fronts. A narrow front may merely reduce a unit's scope for manœuvre and make its task more difficult; it may also tend to increase its losses since dispersion saves casualties. In such cases it will generally help a unit more to reduce the depth of its objective.

7 The weapons of infantry are capable of developing a great volume of fire. This power, combined with the ability to take advantage of cover, natural and artificial, makes infantry strong in defence. Under such conditions it has little to fear from hostile infantry attacks which are unaided by other arms. Concealment and dispersion on the ground are the main factors of importance to infantry acting defensively, because if located it is vulnerable to the action of the enemy's artillery.

8 Though situations in mobile war will normally demand rapid action, infantry should not be hurried into action. To get the best results infantry commanders require to see the ground over which the attack is to pass, or which they are required to defend. Sub unit commanders must be told exactly what is required of them, every individual soldier must be told what his

sub-unit is to do and how it is to be done, since at any moment he may become a leader. For these reasons the expenditure of time on reconnaissance and on the issue of clear orders will always be justified.

Time is best saved by thinking and working ahead rather than by hurrying units into battle without giving them adequate time to make their preparations.

9 Subordinate infantry commanders are at all times responsible for ensuring that their commands adopt the tactical formation best suited to the requirements of the moment. The longer infantry can be kept in hand the longer can control be exercised and the greater is its power of manœuvre. The formation adopted must be such as to minimize losses and facilitate —

- i Control
- ii Manœuvre
- iii The use of cover
- iv The passage of obstacles, and
- v Rapid deployment

10 As infantry bears the brunt of the fighting in modern war and suffers the heaviest casualties, it is subject to moral influences during the battle more than the other arms. Victory cannot be won by the bravery of the men alone. High qualities of leadership are required of infantry commanders of every rank, they must have a thorough knowledge of their profession and be capable of exploiting any success gained to the fullest extent. Above all they must be human; they must study the capabilities and characters of commanders subordinate to themselves and foster by every means in their power the mutual understanding which

is essential for success. The welfare of their men must be the constant care of all commanders.

4 Infantry weapons

THE RIFLE AND BAYONET

(See Infantry Section Leading and Small Arms Training Vol I)

1 The rifle and bayonet are the principal weapons of the individual infantry soldier. The first requirement of the infantry soldier is confidence in these weapons, based on his skill in their use.

2 Accuracy is the chief characteristic of the rifle. By means of rapid fire well-directed bursts, up to a maximum of 15 rounds a minute, can be produced for short periods when particularly favourable targets are presented. Its effective range is up to 1,000 yards, though beyond 600 yards little result can be expected from individual fire.

3 The bayonet is the weapon for hand-to-hand fighting and its use, or the threat of it, finally drives the enemy from his position or causes him to surrender. It is the principal infantry weapon in night fighting.

THE LIGHT AUTOMATIC

(See Infantry Section Leading and Small Arms Training, Vol II)

4 In each rifle platoon, two sections are armed with the light automatic gun. The chief characteristic of this weapon is its power of delivering heavy bursts of

fire with the employment of a few men. Its effective range is the same as the rifle.

5 It is a shoulder mounted weapon, is air cooled and capable of a high rate of fire. To avoid overheating, to avoid excessive expenditure of ammunition and at the same time to produce the necessary volume of fire, it is best to fire in short bursts of four or five rounds.

The accuracy of the gun permits of only a small margin of error in ammunition range estimation or allowance for the effect of atmospheric conditions. Accurate observation of fire is therefore essential if less than four or five rounds are fired in a burst, observation will be possible only in the most favourable circumstances.

6 Taking into account the time required for changing the magazine and for aiming between short bursts of fire an average of 120 rounds a minute can be maintained by a trained man. This high rate of fire does not necessarily produce the best results. Short bursts of fire with pauses between them are often more disconcerting to the enemy's morale and are not so wasteful of ammunition.

HE AND SMOKE GRENADES

Small Arms Trainer Vol II)

1. ~~Summary~~ — Grenades are ~~used~~ ~~in~~ ~~the~~ ~~following~~ ~~ways~~ —
On account of their weight only a few H.E. grenades can be carried on the soldier and consequently they should be employed only in circumstances which favour their special characteristics or when other means of destroying an enemy are impracticable.

The H E grenade weighs approximately one pound, has a maximum range of 325 yards, and a minimum range of about 100 yards. It can also be thrown a short distance by hand. Owing to its high trajectory and steep angle of descent this grenade is suitable for searching behind steep cover which cannot be reached by small arm fire.

The smoke grenade has a maximum range of 250 yards. The density and duration of the screen which can be formed by a given number of these grenades depends largely upon the strength and direction of the wind and other atmospheric conditions. The number of smoke grenades carried by a section suffices, even under favourable conditions, for the formation of a smoke screen of short duration only.

8 *Employment of H E grenades*—The H E grenade is principally an offensive weapon. It is intended to force an enemy from behind cover into the open where he can be dealt with by small arm fire, or as a means of dislodging hostile troops in house-to-house fighting, and in clearing dugouts. Even in a trench system the grenade remains an auxiliary weapon, as success can usually be won more cheaply and more rapidly by movement above ground covered by small-arm fire.

H E grenades should never be used against troops moving in the open, small arm fire is more effective.

9 *Employment of smoke grenades*—Smoke grenades are for use primarily to conceal movement, but may be employed to mask the flanks of a small operation.

Before deciding to use smoke the following must be taken into consideration —

- i The danger of hindering the action of neighbouring troops, or of obscuring the view of those providing covering fire
- ii Owing to the short duration of such smoke screens, the movement to be covered must coincide with the commencement of the screen

Smoke grenades are generally unsuitable for use in defence, except in connection with a counter-attack or to cover a withdrawal

MACHINE GUNS

(See Small Arms Training, Vol. III)

10 *General* —The machine gun is the most powerful of all infantry weapons since it is capable of producing a concentrated volume of accurate and sustained fire beyond the effective reach of rifles and light automatics, and yet present only a small target in action. So long, too, as certain preparations have first been carried out in daylight, the accuracy of this fire can be ensured even in darkness, smoke, mist, etc. But at anything beyond close range, the nature of its fire demands accurate range-taking and rigid control to ensure effect, while expenditure in ammunition is liable to be heavy. *Machine gun ranges are defined as follows:—*

- i Close : up to 800 yards
- ii. Effective 800 to 2,000 yards.
- iii Long : 2,000 to 2,800 yards.

11 The siting of machine guns depends to some extent on the following considerations:—

- i. *Long and narrow beaten zone.*—Owing to the great length of the beaten zone in proportion to its width (e.g. 300 yards long by 5 yards wide at 1000 yards) the zone is very narrow. This is a disadvantage in the case of machine guns, as the zone is very narrow and the beaten zone is very long. This is a disadvantage in the case of machine guns, as the zone is very narrow and the beaten zone is very long.
- ii. *Rates of fire*—Machine guns use three rates of fire—slow, medium, and rapid. At these rates they expend a belt of 250 rounds in four minutes, two minutes, and one minute respectively. During prolonged firing, pauses are necessary to refill with water. Ammunition supply demands careful arrangements.
- iii. *Overhead fire*—Fire over the heads of our infantry can be employed with safety so long as certain precautions are observed. All machine-gun commanders, down to section commanders, are provided with a simple instrument for calculating automatically the necessary safety clearance according to the lie of the ground and the range to our own troops and the target.
- iv. *Indirect fire*—Machine guns are capable of firing indirect, i.e. when the target is not visible from the gun position. Each section carries the necessary equipment for carrying out such fire. Since no cable is carried, the platoon commander must normally be within voice control of his platoon. The flexibility of fire is

indirect positions is limited since a change of target entails fresh calculations and may entail a change of gun position

v. *Concealment*—Although comparatively easy to conceal, the position of a machine gun may be disclosed

- (a) by the steam, which is liable to be given off after 4 to 6 belts of rapid fire in temperate climates,
- (b) by the flash especially in very dull weather or against a dark background
- (c) by dust raised by the muzzle blast,
- (d) by the noise of firing but detection by this means is difficult since the crack of the bullet passing through the air tends to drown the actual noise made by the gun firing

12. *Control*—The platoon commander must be able to control his sections in action only by voice or by orderly they must not be widely dispersed. If platoon control is to be maintained, sections should not be more than about 300 yards apart, the sections should not be placed so close together that one shell can put both out of action. But on occasions both in attack and defence the independent employment of sections may be necessary.

The machine gun company is an integral part of the battalion. Detachments should be made from it only when they are required for tasks which cannot be controlled by the battalion commander. Such detachments should never be less than a platoon. The machine-gun sub-unit, when so detached will be either placed temporarily under the command of another battalion or brought directly under the brigade headquarters. In the latter case control is difficult, as the brigade machine-gun officer has no staff. Normally, therefore, the whole machine gun company will be left at the disposal of the battalion commander, to whom will be allotted brigade tasks for his machine guns as necessary. In whatever way machine guns are grouped, the importance of disposing them in depth must not be forgotten.

13 *Mobility*—Machine guns may be transported on pack, limbered wagons, six-wheeled lorries, or on armoured carriers with or without trailers. But the speed with which they can be brought into action depends as much on the means of movement of the different commanders and the range-takers as upon the method of transport of the guns and essential gun numbers. In the first two cases company and platoon commanders* can, being mounted, carry out reconnaissances in advance of their commands. With limbered transport three men for each gun can be carried limited distances on the limber at the trot; no separate transport arrangements exist, however, for quickly transporting section commanders and their range takers without

* No horses are provided in peace for platoon commanders

whom effective fire can be ensured only by direct fire at short ranges. When lorries and carriers are employed, similar difficulties arise as the greater the number of men carried on each vehicle, the less the flexibility.

occur if platoon or section commanders are unable to reconnoitre independently in advance, and, unless all
 .. loss of efficiency will
 quickly rejoin those
 in handled for short
 vy and ammunition

supply presents difficulties

14 *Methods of fire* —Machine guns cannot function to their full capacity unless their fire can be maintained in all conditions. Therefore in defence they should be given first an arc of fire and later fixed lines. In attack the initial targets are the first essential, an arc being allotted later, if circumstances allow.

In both cases every effort should be made to select positions from which the guns can cover as wide an arc as possible, in addition to firing on any definite targets given to them.

In order that fire on fixed lines may be effective, pre-

be aligned with the correct elevation by means of lights placed for a few minutes where their fire will be required to fall

Before effective fire can be opened after dark or at dawn, certain preparations must be made in daylight. These require that platoon and section commanders should be allotted their targets and the area for their gun positions and given a minimum of one hour of daylight on the ground. Once these have been made, and guides can be provided, the machine guns can be brought into position after dark. This may be of great advantage in effecting surprise.

Direct fire is the normal and most effective method of engaging a target. It should always be employed when the situation is uncertain and the enemy may have to be engaged anywhere in an allotted arc.

Indirect fire is a suitable method for guns required to fire from exposed positions on one or two targets which can be detailed in advance. It is particularly suitable for platoons of battalions in reserve detailed to provide covering fire in the initial stages of an attack. With this method there is less danger of casualties or of guns being pinned to their positions by hostile fire just at the time when they are required to move. For this method of fire certain preliminaries are necessary, but a well trained platoon should be ready to engage a target as quickly from an indirect as from a direct position.

15 *Maintenance in action*—Each machine gun has 14 belts of ammunition with it on the vehicle. A further 18 belts are carried in company reserve. The whole of this ammunition is sufficient to allow of a medium rate

of fire being maintained **only for one hour** The strictest control of ammunition expenditure is therefore essential The battalion commander will be responsible for laying down the number of belts to be maintained at the gun or to be expended in a particular phase of an operation

Dumping of ammunition will be authorized by the brigade or other superior commander only when extra ammunition is required for certain definite tasks, *e.g.* in support of an attack or for harassing fire tasks in defence

Although two men are sufficient to maintain in action a gun once mounted and supplied with ammunition, three men are necessary to carry the gun, tripod, condenser, and one belt of ammunition into action even a short distance The third man is then available to bring up more ammunition The remaining personnel can come up later Since movement to and from the gun is liable to disclose its position, adequate ammunition should be placed at the gun at the outset, and thereafter movement near it reduced to a minimum

16 *Fire effect*—Observation of the strike of bullets can seldom be guaranteed Therefore machine-gun fire is dependent for fire effect on accurate range-taking and the employment of an adequate number of guns according to the range

As the range increases, more guns will be required to

machine gun post Beyond that range double the number of guns will be required to obtain similar effect

17 *Selection of positions*—A clear field of fire facilities for observation a covered approach concealment and cover for the guns and their detachments and facilities for ammunition supply are the requirements of a good fire position In arranging for the concealment of the guns it is important to consider the background The neighbourhood of landmarks and the tops of prominent features should be avoided

ANTI TANK WEAPON

18 An anti tank platoon of two sections each of two guns forms part of the headquarter wing of an infantry battalion Guns may be used singly if necessary Distribution should be in depth both in attack and defence and movement by bounds Reconnaissance is necessary in order to decide the best distribution of the limited number of guns available commitment to definite positions is to be deprecated unless the ground restricts enemy armoured fighting vehicles to definite lines of approach

It is important to co ordinate anti tank defence between neighbouring units and between infantry and artillery weapons

5 *Fire its organization application and co-ordination* (See also Small Arms Training Vols I and III)

1 Fire is the dominant factor in modern war—
The backbone of Infantry tactics is the combination

situation, the target, the range, the state of the ammunition supply, and the effect it is desired to produce. Fire should normally be deliberate, rapid fire being considered as a reserve of power to be employed only when occasion demands. Even then it must combine accuracy with rapidity and never degenerate into an uncontrolled expenditure of ammunition.

5 Every effort must be made to obtain the correct range to each target. If any doubt exists it is best to under estimate the range. The accuracy of the range-taking, or judging distance, should be checked by observing the strike of the bullets, where possible, and by comparing the map range. It may sometimes be advisable to direct fire in the first instance on to an area near the target such as a dusty road or track, where observation is easier.

6 Skilful fire direction and control are, however, of little use unless the men are trained in fire discipline.

Fire discipline entails strict attention to the signals and orders of the commander, correct adjustment of sights, deliberate aim, and economy of ammunition. It demands of the men endurance of the enemy's fire even when no reply is possible, and a cool and intelligent use of their weapons when control by the fire unit commander can no longer be exercised.

7. When artillery is available, consideration must be given from the outset to the relative capabilities of guns and machine guns, particularly to the fact that machine-gun ranges are comparatively short, their trajectory flat, and observation of their fire difficult except at very short ranges.

Since it is unlikely that either the available machine guns or artillery will be able, unaided, to provide adequate covering fire for the rifle companies either in attack or defence, it is essential that there should be the closest co-operation between them not only in the preparation of the fire plan, but also throughout the battle. The commander under whom both are operating is responsible for co-ordinating their fire.

In order to afford the infantry efficient and continuous support in the attack, those entrusted with the duty of providing covering fire require to know —

- i The exact position at stated times of the infantry they are supporting
- ii Its immediate objective.
- iii The type of fire which is preventing it attaining its objective, and where it is coming from.

Subordinate infantry commanders must therefore do everything in their power to keep the artillery and machine-gun commanders supporting them continuously informed of the position of their forward troops, and to indicate to them where and when fire is required.

6. Use of ground

(See Infantry Section Leading)

1 The skilful use of ground assists surprise, conceals movement and enables losses to be minimized. Any tendency to rely on maps and to neglect the study of ground is to be deprecated, the map should be used in preparation for a view of the actual ground and in

confirmation of, and to supplement, what the eye can see

2 The main infantry problem in attack will generally be the passage of open ground when exposed to the fire of modern weapons. This can be accomplished only by the provision of adequate covering fire and by a judicious utilization of the facilities offered by the ground both for providing suitable positions for small arm fire and for giving covered avenues of approach. Close or wooded country will offer special opportunities for a concealed advance and for outflanking or surprising the enemy (Sec 35, 5 and 6)

3 In the attack the ground, air photographs, and the map should be carefully studied in order to find —

- i Covered approaches,
- ii Positions from which observed covering fire can be brought to bear
- iii Features the occupation or capture of which will enfilade the enemy's position and enable a flank attack to be made under favourable conditions,
- iv Ground favourable for the co-operation of armoured fighting vehicles,
- v Probable lines of advance of hostile tanks and the areas in which hostile tank counter attacks are likely to be made,
- vi Ground which will enable the attack to be defiladed against hostile machine gun fire, and
- vii Facilities for concealment from hostile aircraft

4 In the defence in wooded, close, or broken country, the ground must be examined to ensure that no area is

quence be allotted narrower fronts

When time for preparation is short, the concealment afforded by natural cover is often more valuable than hastily constructed works visible from the air, which are easily destroyed by shell fire

Ground should, therefore, be studied in order to find —

- i. Facilities for observation, so that the enemy cannot approach unseen,
- ii Positions difficult for the enemy to locate from the ground or the air,
- iii
- iv.

5 If it is anticipated that the enemy may use gas, a thorough examination of localities likely to be dealt with by enemy gas is necessary both in attack and defence. Such localities will probably be of limited size, and it may be desirable to avoid occupying them.

7. Command and intercommunication

COMMAND

- I. A commander influences the course of the battle

2 In order to employ the initiative of subordinates to the best advantage he must decentralize command

Once the tactical plan has been made, and the necessary orders issued subordinates must be left a free hand in carrying out their task. An attempt to exercise personal control over all portions of a command will inevitably lead to the neglect of other duties. Nevertheless there are occasions when a personal example of bravery by a senior officer has a steadying effect, and in a crisis every other consideration may have to be sacrificed to achieve this end

3 To be successful leaders in war, all commanders, even of the smallest sub units, must possess character, resource, and confidence in themselves and the troops under them. Similarly, they themselves must inspire confidence in those they lead

4 To lead infantry in battle a commander must —

- i Be able to grasp a tactical situation rapidly.
He must be certain he understands the intentions as well as the orders of his superior
- ii Be able to make quickly a sound tactical plan, and express it in clear and concise orders, either verbally or on paper
- iii Be able rapidly to sift all information received as to the enemy's dispositions and movements, and keep a mental picture at all times of the dispositions and progress of his own and neighbouring troops
- iv. Have a sound knowledge of the use of

left unwatched where the enemy could penetrate through the defences or outflank them. The infantry will often be forced to deploy to a greater extent than would be necessary in open country, and units should in consequence be allotted narrower fronts.

When time for preparation is short, the concealment afforded by natural cover is often more valuable than hastily constructed works visible from the air, which are easily destroyed by shell fire.

Ground should, therefore, be studied in order to find —

- i Facilities for observation, so that the enemy cannot approach unseen,
- ii Positions difficult for the enemy to locate from the ground or the air,
- iii Covered approaches in rear of the position which will facilitate counter-attack and supply,
- iv Areas defended by natural anti-tank obstacles.

5 If it is anticipated that the enemy may use gas, a thorough examination of localities likely to be dealt with by enemy gas is necessary both in attack and defence. Such localities will probably be of limited size, and it may be desirable to avoid occupying them.

7. *Command and intercommunication*

COMMAND

1 A commander influences the course of the battle by the forethought he displays in his initial orders and, subsequently, by his organization of fire and handling of reserves and by his determination to win.

control his reserve and communicate with his superior commander when necessary

If too far back he will be unable to influence the fight when rapid action is required

If too far forward he is liable to be influenced unduly by the local situation, he may possibly interfere with, or cramp, the initiative of subordinate commanders; it may be difficult for superior commanders to communicate quickly with him, he may become involved in the turmoil of the fight and be helpless at a moment when action is required, he will not be near his reserve and may have difficulty in communicating with it. The best site will be one neither too far forward nor too far back, but outside the immediate area of the fight, it should be near a road or track and near the battalion reserve (*see also Sec. 8, 7*) It must be clearly marked by day and night

7 Commanders of rifle companies and platoons should be near their company or platoon reserve, section commanders should place themselves where they can best control the fire and the movements of their sections. The machine-gun company commander will normally be best placed at or near battalion headquarters, so that he can keep in close touch with the situation, make full use of existing battalion communications, and arrange machine-gun support in accordance with the orders of the battalion commander. Machine-gun platoon commanders should be where they can best control their platoons, section commanders should be where they can control the fire of their sections and observe the progress of the battle within their allotted arcs

8 All commanders are responsible for keeping their

respective superiors, as well as neighbouring units and subordinate commanders regularly informed of the progress of events (including moves of their headquarters) and of important changes in the situation as they occur. The value of reports increases as the action progresses. Company and battalion commanders are responsible for taking steps to obtain information themselves, and must not wait for reports which may never arrive.

9 A good system of liaison is essential to success in battle. In addition to orders, reports, exchange of information and personal visits of commanders to each other liaison officers should be used to ensure touch between neighbouring formations and units. Officers with tact, personality, and experience are required for this duty. They should take with them the necessary orderlies for intercommunication, and should return to their own unit at intervals to render personal reports.

Satisfactory results will not be obtained unless liaison officers are taken fully into the confidence of their commanders and given complete and constant information about operations in progress and intended.

10 Within the battalion, orders and messages in battle will generally be given verbally but they will be confirmed in writing. Verbal orders should always be given in the correct sequence so as to ensure that nothing is omitted. Maps should be marked with boundaries, objectives, routes, etc., in order to save time.

Verbal reports and messages must be kept as short as possible. The officer or orderly to whom a verbal report is given should be made to repeat it before he is despatched.

11 The means of intercommunication within the battalion are visual signalling orderly, and cable. The signalling officer is responsible for using these means to the best advantage distributing his personnel according to the tactical requirements of the situation in order to establish a system of communication that will meet the needs of battalion H Q and companies. Except in an emergency, trained signallers should not be employed as orderlies.

When operations are imminent it may be advisable for orderlies from rifle companies to be sent to battalion headquarters to facilitate communications between the battalion and company commanders, additional arrangements, if necessary, must be made for communication inside companies.

8. Co-operation with the other arms

CAVALRY

1 The armament of cavalry enables it to fight mounted or dismounted. It is capable of undertaking most operations which infantry can carry out, but it is wasteful to employ cavalry dismounted as infantry owing to the number of men necessary as horseholders.

In battle it is employed to reconnoitre, to protect the flanks, to co-operate with the other arms in turning movements, to act as a mobile reserve, and to exploit the success of the other arms or to cover their withdrawal.

2 Close co operation between infantry and cavalry will be required in all protective duties. The function of cavalry on such occasions is to act as the eyes of columns it is covering. In advanced guard

11 The means of intercommunication within the

establish a system of communication that will meet the needs of battalion H Q and companies. Except in an emergency, trained signallers should not be employed as orderlies.

When operations are imminent, it may be advisable for orderlies from rifle companies to be sent to battalion headquarters to facilitate communications between the battalion and company commanders, additional arrangements, if necessary, must be made for communication inside companies.

8. Co operation with the other arms

CAVALRY

1 The armament of cavalry enables it to fight mounted or dismounted. It is capable of undertaking most operations which infantry can carry out, but it is wasteful to employ cavalry dismounted as infantry owing to the number of men necessary as horseholders.

In battle it is employed to reconnoitre, to protect the flanks, to co-operate with the other arms in turning movements, to act as a mobile reserve, and to exploit the success of the other arms or to cover their withdrawal.

2 Close co-operation between infantry and cavalry will be required in all protective duties. The function of cavalry on such occasions is to act as the eyes of the columns it is covering. In advanced guard

flank guards, and protection at rest when the opposing forces are a considerable distance apart, the cavalry and armoured cars will be the first to make contact with the enemy and so supplement the information received from air reconnaissances

In delaying action when the hostile pursuit is not close, a body of cavalry will usually be operating between the infantry columns and the enemy

All information received will be passed back by the cavalry, but in addition it will be advantageous for infantry commanders to keep in touch whenever possible, with the headquarters of cavalry units operating between them and the enemy. This will ensure close liaison, and facilitate co operation should combined action become necessary

ARTILLERY

3 Artillery is used in co-operation with other arms in order to gain fire superiority. Its general characteristics are great range, accuracy, fire power, and mobility.

The fire of artillery in support of infantry will be co ordinated with that of infantry weapons: co-operation between artillery and machine guns is of special importance (Sec 5 7)

4 In order to develop the maximum power of artillery, command should be centralized as far as is consistent with effective control but the degree of centralization possible depends largely on facilities for intercommunication and consequently varies in different phases of battle

Artillery may be placed either " under the command

of" or in support of" a subordinate formation or unit. Artillery placed in support of a formation or unit while remaining under the command of a superior formation maintains the closest touch possible with the troops it is supporting the artillery commander will at all times act in accordance with the requirements of the situation which faces the unit or formation he is supporting

5 Infantry in battle is concerned mainly with the

1. *Light artillery*—The light howitzer (3.7 inch) fires high explosive and smoke shell and has a maximum range of about 6 000 yards 114 rounds a gun are carried in action of which a small percentage only is smoke It is valuable for the close support of infantry by reason of its ability to move over difficult ground as well as the facility with which it can utilize covered approaches and occupy covered positions at short ranges

A proportion of the available light artillery may be placed under the command of attacking infantry brigades for the purpose of close support of battalions their role is to deal quickly with unexpected resistance The chief considerations governing the selection of positions for light artillery are facilities for fire control and for intercommunication with the infantry commander The howitzers need not be in close

proximity to the troops they are supporting, but it will often be found that only the shortest signal communications can be depended upon and that certain targets may best be engaged with guns advanced to close range

In defence, light artillery may be held in reserve for the support of counter-attacks, it may also be used for any divisional artillery tasks for which it may be suitable, and possibly for anti tank defence

- ii *Field artillery*—The field gun (18 pr) fires high explosive shrapnel, and smoke. It has a maximum range of 9 600 yards with high explosive and 6 600 yards with shrapnel. The field howitzer (4.5 inch) fires high explosive and smoke, and has a maximum range of 6,800 yards

Field artillery forms the bulk of the artillery in the field. In the attack field artillery in co operation with machine guns provides the covering fire for rifle companies, either by means of concentrations of fire or barrage fire. The former method is economical in guns and ammunition, but for effect is dependent on accurate information of hostile dispositions. Barrage fire in the uncertainty as to the enemy's exact dispositions which generally exists is a simpler method of giving support to the attacking troops, but it usually necessitates the employment of a larger number of guns and a more liberal supply of ammunition. The time required to give effect to any programme of covering

fire is an important factor which will vary in every case

As a guide it may be taken that the frontage to be allotted to each 18 pr should not be greater than 30 yards at normal rates of fire. For short bursts of fire this frontage may be increased by employing a more intense rate of fire. These periods must, however, be of strictly limited duration and not exceed 5 minutes owing to strains on equipment and personnel which they entail. At a normal rate of fire of 4 rounds a gun a minute for a period of 20 minutes approximately half the ammunition available in battery echelons would be expended.

Field guns should, as a rule, be employed for forming the belt of fire nearest to the assaulting troops while field howitzers and such medium artillery as may be available are used to give depth or to protect the flanks of the attack.

In addition to providing covering fire, field artillery may be employed for the neutralization of hostile batteries, the destruction of minor defences, the harassing of hostile communications, for screening or blinding with smoke, and (especially in the case of field howitzers) for the destruction of wire obstacles. It may also be employed as close support artillery, to replace or reinforce the light artillery (Sec 11, 17).

In defence, field artillery, in co-operation with the fire of all infantry weapons, provides a means of hampering hostile preparations for an

prepared to sacrifice their respective requirements to some degree. In mobile operations the artillery commander may often have to be close to his batteries. In these circumstances the infantry commander should locate his headquarters in close proximity to those of the artillery if he can do so without prejudicing his control of the battle.

In practice it may not always be possible for the two headquarters to adjoin. The responsibility for ensuring continuous intercommunication will then rest with the infantry commander, the artillery commander being responsible for detaching a liaison officer to the headquarters of the formation he is supporting. The duties of this liaison officer are to represent his commander, to advise and keep the infantry commander informed on all matters relating to artillery co-operation and to transmit to his own commander the situation of the infantry and the infantry commander's intentions and requirements as regards artillery support.

8 It will seldom be necessary to attach an artillery liaison officer to a battalion by day. A forward observing officer must not be regarded as a liaison officer; his duties however demand a constant knowledge of the situation of the forward infantry. During the hours of darkness forward observing officers will generally be withdrawn and replaced by liaison officers with forward battalions.

9 In the forward area arrangements for anti tank defence are organized by infantry commanders. Artillery commanders are responsible for organizing a second line of anti tank defence in the area occupied by the artillery.

10 The role of artillery in attack and defence may be summarized under the following headings —

ATTACK

- i Preparation i.e. preliminary bombardment of the enemy positions where strong defences have to be attacked without the aid of tanks and where complete surprise is not essential
- ii Actual support of the attack including the use of close support artillery This is dealt with fully in Sec 11
- iii Counter battery work and harassing fire

DEFENCE

(See also Chapter III)

- iv Counter battery work and harassing fire
- v Counter preparation i.e. fire directed against the enemy's probable forming up places and forward communications
- vi Defensive fire i.e. " " " " with infantry
- vii
- viii

11 Smoke shells are fired by the artillery in order to —

- i Make a screen behind which the attacking troops can move unobserved
- ii Blind observation posts and anti tank weapons

- iii Mask defended localities and machine gun positions
- iv Screen an open flank from observation
- v Assist the attacking infantry in maintaining direction by marking objectives, or the boundaries between formations, or by indicating the new front when a change of direction is necessary
- vi Notify and co-ordinate the time for the resumption of an advance after a pause on an intermediate objective
- vii Prolong a front of attack and so induce the enemy to disperse his fire Smoke can be usefully employed for this purpose on those portions of the front where it is not intended to press home the attack
- viii Conceal the forward move of reserves or the launching of a counter offensive
- ix Cover a withdrawal

For further details see Manual on the use of Smoke The amount of smoke shell in the field is limited, the effectiveness of a smoke screen varies with the weather conditions

12 *Artillery escorts*—As a rule the protection of artillery is ensured by the dispositions of the other arms, it can also protect itself to a certain extent by its light automatic guns When, however, artillery is ordered into an exposed position a special escort may be necessary When the escort has been detailed, and its commander given his orders by the senior officer present, he must be allowed a free hand in carrying them out.

The duties of the escort will be —

- i To give timely warning of attack.
- ii To keep the enemy beyond effective rifle range of the guns or if necessary to cover their withdrawal

TANKS

13 Tanks are of great assistance to infantry in its task of closing with the enemy provided ground and other conditions are favourable for their employment

They are classified as medium light and close support tanks

The main role of the medium tank is to destroy the enemy by fire or shock action

The principal role of the light tank lies in reconnaissance duties in close co-operation with other tanks. In addition it may in certain circumstances be used independently of other tanks in co-operation with cavalry or infantry

The close support tank will accompany medium and light tanks in battle and provide them with close support fire or smoke screens

14 Tanks can move across country and can within certain limits cross trenches climb slopes and surmount obstacles. They can crush wire and thus facilitate the advance of infantry. Their armour gives them a higher degree of protection against shrapnel and ordinary machine-gun and rifle fire. Their armament enables them to destroy hostile tanks anti tank guns and machine guns as well as personnel. They can within limits maintain general direction during darkness or fog though their rate of movement will be slow and they will have

difficulty in locating objectives. Certain types of ground limit their movements, deep water, cuttings, swamps, boggy or very heavily shelled ground, rocky mountainous country, and thick woods present serious obstacles to them.

Their vision is limited especially when the vehicle is fully closed for protection or when driving at night, for this reason objectives must be clearly indicated and should be easily recognizable.

Tanks are vulnerable to direct fire from guns and anti-tank weapons, every effort will be made to protect them from such fire by smoke, by the action of the other arms, and by allowing them every possible freedom in selecting their own lines and methods of approach and withdrawal.

15 The co-operation of tanks with infantry in the attack will usually take one of the following forms —

- i Tanks may be used as the main assaulting arm, moving either in advance of the infantry or co-operating from a flank. On such occasions they are best used as complete units and in considerable strength. Their objectives will include those allotted to the infantry but their line of advance will be selected for its tactical suitability for tanks and will not necessarily conform to the lines of advance of the infantry.

Whenever possible the lines of advance should not conform since tanks are liable to draw enemy fire.

- ii When infantry is the main assaulting arm, tanks may be so allotted that they can be made available at short notice to deal with any oppo-

sition which is preventing the infantry from establishing itself on the objective

- 15 When infantry is used to capture the initial objectives tanks may be employed to provide the necessary impetus and support for the further advance

16 In all offensive operations the infantry advance must begin immediately the tanks make such forward movement possible, this applies

advantage of every opportunity created by the tanks to get forward close with the enemy and hold the position

Tanks should not be left unsupported on an objective longer than is necessary on conclusion of the operation they should be rallied so as to be available in the event of counter attack or for any other operation required

17 An attack carried out by tanks and infantry should be regarded as one operation in which each arm helps the other and both arms should act under the orders of one commander

18 When co-operating with infantry in defensive operations tanks should be retained in reserve for offensive action when the occasion arises

19 For the purpose of co-operating with infantry, two simple flag signals are used by tanks —

- 1 Green and white flag—The opposition is crushed, all is clear for you to come on

11. Red and yellow flag—The tank is broken down, do not wait for it

In addition a signal will be arranged, and varied from time to time, to denote "friendly tank coming out of action"

ENGINEERS

20 Field engineering is intimately connected with tactical operations in progress or in contemplation. A division is allotted field engineer units to undertake or supervise the engineering work required to enable it to fulfil its functions as a fighting force.

21 Infantry is responsible for siting, organizing and constructing its own defence works including wire entanglements and for carrying out its own assault bridging operations. When required materials and minor technical assistance will be supplied by the engineers. On such occasions the engineers work under the orders of the infantry commander. When detachments of infantry are detailed to assist the engineers in work for which the latter are responsible they will work under the orders of the engineer officer in charge of the work. Engineers may at times be required to undertake work in connection with the design and laying out of trenches and other defensive works.

22 Although trained to fight as infantry engineers should not be regarded as reserves but will be used to fight only as a last resource. They are technical troops and casualties in their ranks are difficult to replace.

Should the enemy make a surprise attack in an area where engineers are working the senior officer on the spot will assume command and will issue orders as

the action to be taken employing the engineers to assist in repelling the attack if necessary. They will be released as soon as the situation permits, in order that they may resume their normal duties.

23 Further details regarding co operation between infantry and engineers in working parties are contained in Chapter VIII.

AIRCRAFT—ARMY CO OPERATION SQUADRONS

24 Army co operation (A C) squadrons carry out any air reconnaissance of our own or the enemy's positions required by the commander of the army formation concerned. They report by the approved methods the positions of our own and the enemy's troops and any movement seen.

They should not be diverted from their task of reconnaissance and used for offensive action except in cases of great emergency. Each aeroplane carries two machine guns, but these are intended chiefly for self defence.

Every aeroplane employed on army co operation duty can if the situation demands carry a few light bombs but does not normally do so.

Those aircraft which are specially concerned in working

plans and tasks of the troops on the ground and the latter must arrange that, with due regard to security from

hostile observation, all necessary signals are displayed immediately they are called for and shown continuously until an acknowledgment is received from the observer

Aeroplanes are also employed to take photographs which may be either vertical or oblique. Oblique photographs are panoramic views taken at a comparatively low altitude. They are easier to understand than vertical photographs and are very useful in helping the troops to form an idea of the ground over which they have to operate

Reconnaissance at night — On a fine moonlit night air observers can detect road movements of troops and transport without the use of flares. Parachute flares make it possible to detect road movement on dark nights and also activity in the neighbourhood of camps, dumps and billets. By the use of magnesium flares, photographs of important localities can be taken at night

Intercommunication between aeroplanes and infantry

25 The following are the methods by which intercommunication can be established between aeroplanes and infantry other than by wireless telegraphy and radio-telephony —

Air to ground — Message dropping — Cases may occur where it is not possible or desirable for an observer to communicate a message by radio-telephony or wireless telegraphy. In these circumstances communication is effected by dropping a report in a message bag which has a parti coloured streamer attached to it to enal

it to be located readily By this means messages can be dropped fairly accurately from a height of 500 feet even

communicate

This is accomplished by means of "ground indicators" which are displayed at the headquarters whenever an aeroplane flies low in its vicinity and fires a green signal light

The form of ground indicator for an infantry brigade headquarters is —

With Inf Bde call letters



The identity of the formation is shown by call letters formed by ground strips placed on the left of the indicator as seen by an observer flying from the direction of the enemy These call letters are arbitrarily fixed and constantly changed by the chief signal officer of the army formation concerned

Care must be taken that ground indicators are not displayed or other indications given when they can be observed by enemy aircraft, as these will betray the location of the headquarters

The receipt of a dropped message is acknowledged by displaying the ground letter "F" immediately it is clear that the message can be picked up If the message

A close reconnaissance aeroplane charged with the special mission of reporting the position of our own troops carries black strips 12 inches wide painted on the under surface of the lower planes from the leading to the trailing edge about 8 feet from the fuselage. These strips are continued by flaps of canvas 18 inches long. Troops should, however, be prepared to communicate with any aeroplane, whether marked or otherwise, should the appropriate signal be made.

u *Message picking up* — This method of transmitting messages has certain disadvantages —

(a) An aeroplane diving to pick up a message may disclose the position of a headquarters and may also draw fire unless it flies at a low altitude for some distance before and after picking up the message.

(b) Considerable delay is incurred in picking up messages and during the time so spent an aeroplane may lose valuable information.

27 *Message picking up* must therefore be confined to cases when communication is of vital importance and no other means are available. The procedure will then be as follows —

(a) A flat open space must be selected well clear of trees, telegraph poles, etc.

(b) The ground indicator of the formation will be displayed.

- (c) Two rifles with fixed bayonets, or poles of equivalent height, will be placed in the ground 10 feet apart at right angles to the wind
- (d) The position of the rifles will be marked by two ground strips 8 ft 6 in by 1 ft 4 in arranged in the shape of a funnel leading towards the rifles and into the wind
- (e) A loop of cord is stretched between the butts of the rifles, caught round the butt traps and so arranged that a pull on its centre in an upward direction will cause it to come away without fouling the rifles. The message bag is attached to the cord mid way between the rifles and rests on the ground
- (f) When the message is ready the letter ' M ' will be put out

As soon as the observer sees from the ground signal that there is a message for him, a grapnel will be lowered and it will fly low so as to catch the loop of cord suspended between the two uprights

A close reconnaissance aeroplane charged with the special mission of reporting the position of our own troops carries black strips 12 inches wide painted on the under surface of the lower planes from the leading to the trailing edge about 8 feet from the fuselage, these strips are continued by flaps of canvas 18 inches long. Troops should, however, be prepared to communicate with any aeroplane, whether marked or otherwise, should the appropriate signal be made

26 *Message picking up*—This method of transmitting messages has certain disadvantages —

- (a) An aeroplane diving to pick up a message may disclose the position of a head quarters and may also draw fire unless it flies at a low altitude for some distance before and after picking up the message
- (b) Considerable delay is incurred in picking up messages and during the time so spent an aeroplane may lose valuable information

27 Message picking up must therefore be confined to cases when communication is of vital importance and no other means are available. The procedure will then be as follows —

- (a) A flat open space must be selected well clear of trees telegraph poles etc
- (b) The ground indicator of the formation will be displayed

to ride forward and to carry out reconnaissances and make their plans so that there will be a minimum of delay when their units arrive

The time will come when the mounted troops are definitely held up and can make no further progress. Their first duty will then be to gain time for the advanced guard to deploy for action. Their second duty will be to obtain information and especially to locate the enemy's flanks.

At this stage it is unlikely that the information required by the commander can be obtained by patrols alone. It will be necessary to gain closer contact with the enemy along his front to drive in or pierce the hostile protective troops and so gain the information and ground which the commander requires before he can form his plan and deploy his troops for the attack. This will entail fighting and is a task for which infantry will be required.

3 *Action of forward bat al ions* —It is desirable that when the advance of the mounted troops has been finally checked the leading infantry of advanced guards should operate on a co ordinated plan. Time will be of the utmost importance in order that the hostile advanced troops may be driven in before the enemy's main body has time either to develop an offensive movement or to strengthen its defence. Decisions must therefore be made quickly. The plan must be simple and one that can be put into effect rapidly. Objectives should be

CHAPTER II

ATTACK

9 *The gaining of contact*

1 As a force advances and contact with the enemy becomes probable, tactical considerations become paramount. The force will advance in several columns and will be so disposed that it can be deployed rapidly to meet any eventuality, each column being covered by its own advanced guard.

2 *The mounted troops* —The first troops to gain contact with the enemy will normally be the mounted troops of the advanced guards. Their role is protective reconnaissance, and since this entails dispersion their power of taking vigorous offensive action will be limited; early warning of impending danger is usually all that can be expected of them. It will, however, be their duty to drive away minor opposition, including hostile patrols, and to resist the advance of the enemy to the limit of their power. It may often be necessary for the leading infantry of the vanguard to assist the mounted troops in dealing with minor opposition on the main line of advance.

The officer commanding the mounted troops will keep the vanguard and advanced guard commanders constantly informed as to the progress of the advance, and particularly as to any resistance which cannot be overcome. Commanders of battalions detailed to act as vanguard or as advanced guard will be prepared

to ride forward and to carry out reconnaissances and make their plans so that there will be a minimum of delay when their units arrive

The time will come when the mounted troops are definitely held up and can make no further progress. Their first duty will then be to gain time for the advanced guard to deploy for action, their second duty will be to obtain information and especially to locate the enemy's flanks

At this stage it is unlikely that the information required by the commander can be obtained by patrols alone, it will be necessary to gain closer contact with the enemy along his front, to drive in or pierce the hostile protective troops, and so gain the information and ground which the commander requires before he can form his plan and deploy his troops for the attack. This will entail fighting, and is a task for which infantry will be required

3 *Action of forward battalions* —It is desirable that when the advance of the mounted troops has been finally checked, the leading infantry of advanced guards should operate on a co-ordinated plan. Time will be of the utmost importance in order that the hostile advanced troops may be driven in before the enemy's main body has time either to develop an offensive movement or to strengthen its defence. Decisions must therefore be made quickly the plan must be simple and one that can be put into effect rapidly. Objectives

Forward rifle companies will be directed against definite objectives, inter company boundaries may be given, but they will seldom be necessary in such circumstances, as companies can establish contact on each objective

Some machine guns should be detailed to move forward to assist the advancing rifle companies, others may be required to provide covering fire for the initial advance and then come into reserve

Battalion commanders will be prepared to act with the greatest energy

As the infantry advance progresses the mounted troops will protect the flanks

4 *Artillery co operation*—The outstanding features in this phase are —

- i Lack of information as to where resistance is likely to be encountered
- ii The need to push on rapidly, without the constant pauses required to produce elaborate fire plans

In such circumstances bold and vigorous action by the artillery is essential Artillery support rigidly applied by time table will serve to impede rather than assist the rifle companies, by restricting their initiative and power of manœuvre Moreover, time and information will be lacking to make a pre-arranged programme effective, and communications for centralized control of the artillery will not exist.

Whenever the situation is indefinite and knowledge of the enemy scanty, artillery support can usually best be given by observed fire.

As the leading troops fight their way forward they will eventually encounter stiffening resistance and

localities of such strength and tactical importance that it may be necessary to concentrate the artillery fire and deal with successive localities to a limited depth by means of a short time programme. In these circumstances simple concentrations will usually be the best method of support.

5 *Action of rifle companies* —When the leading rifle companies come under the effective fire of machine guns and rifles they will be forced to fight their way forward with their own weapons and such assistance as may be obtained from machine guns, artillery, and possibly tanks.

The action will be one of fire and manœuvre (Sec. 30, 15). Machine guns must be handled boldly. Battalion commanders should be well forward so that they can keep in close touch with the situation and exercise their influence on the fight without delay.

When owing to increasing enemy opposition the advance shows signs of coming to a standstill rifle company commanders must take steps to ensure that forward platoons seize and hold all necessary view points and tactical features on the front in order that the further attack may be planned and prepared successfully. Observation is essential, not only for the preparation of an attack but also for giving adequate support to the subsequent advance. Intelligence sections of forward battalions must be active at this stage, reconnoitring the best view points and endeavouring to locate accurately the enemy positions, defended localities, and observation points.

6 Eventually the time will come when the leading troops are no longer able to advance, they will find

10 General considerations regarding the method of attack, and its conduct

2 *Preparation*—Every attack calls for reconnaissance, preparation and organization.

mander will so combine the efforts of the component parts of his force as to ensure that his infantry is able both to reach its objective in the best possible condition for engaging in close fighting and to hold it

3 *Time factor*—Rapidly of action will be important. Reconnaissance and a well co-ordinated plan are

the whole front. The main attack will therefore be launched on that part where success promises the most far reaching results.

The frontage on which it will be possible to make the main attack will depend on the amount of artillery and other supporting arms that can be made available to support it, to launch infantry to the attack without adequate covering fire will result only in unnecessary casualties.

The bulk of the covering fire must be concentrated on those portions of the front where the attack is to be driven home. Hostile defences on the flanks of the main attack will be neutralized by fire or blinded by smoke on such portions of the front the absence or weakness of artillery support must not deter battalions from making every effort to advance and close with the enemy with the aid of such covering fire as can be organized with their own weapons.

When allotting a task to a unit the objectives and the situation on the flanks must be clearly defined. Adequate superiority of fire must be provided on a wide enough front to preserve the mobility of the attack, and to prevent it being stopped by flanking machine gun fire.

Care should be taken not to over estimate the capacity of an infantry battalion, and it should not be ordered to capture and hold ground unless such tasks are within its powers. A battalion which is over taxed is an easy prey to counter attack and may thus suffer a considerable loss of morale which takes time to restore.

6 *Use of reserves* —The initial attacks, if successful, will result in a series of penetrations into the enemy defences of which full advantage should be taken. By

attacking in flank any enemy still holding out infantry units should work outwards and extend the frontage on which the enemy has been defeated. Reserves of forward units should be used to exploit tactical success and to widen and deepen any penetration that has been effected. Their efforts should be directed to where the attack is progressing rather than to where it is held up.

The reserves in the hands of the higher commander are the chief means he has of influencing the fight once the attack is launched. He also has the artillery which centralized control will enable him to use when and where required. Reserves should be moved forward by bounds as the attack progresses so that they can be used with a minimum of delay when required but they must not be placed so far forward that they suffer undue losses from shell fire, become prematurely involved or lose their power of movement. The commander should locate his reserves in accordance with their probable roles and bearing in mind the importance of —

i Communications

ii Mobility

iii Concealment

iv Keeping them clear of the battle until required

Whatever may be the allotment of troops a commander must always keep or form a reserve and be prepared to use it to meet the unforeseen or to exploit a tactical success without delay.

7 *Control* — In general control is obtained by —

- i Issuing clear orders in which definite tasks are allotted to definite bodies of troops and from which all arms may understand thoroughly what assistance they may expect from each other

tion of such exposed positions without disclosing them to the enemy often requires considerable time

2 A co-ordinated fire plan on a timed programme will generally be advisable at the commencement of an attack.

As a general rule attacking battalions will retain control of the whole of their own machine guns to which however certain brigade tasks may be allotted in the opening stages. All or part of the machine gun companies of battalions in reserve may be utilized to increase the covering fire for the initial advance. For this purpose they may be kept under brigade control or placed temporarily under the command of an attacking battalion in either case the tasks given them should be limited both in time and ammunition expenditure so that the personnel and equipment will be fit and ready to accompany their own units when the latter are due to advance

3 The duties of machine guns in the attack are —

- i To assist by fire the advance of the attacking troops and in particular to apply concentrated fire to localities which may check the advance
- ii To protect the flanks of the advancing rifle companies and to cover gaps between units and formations
- iii To deal with counter attacks and to hold successive objectives upon which the forward troops can rally if driven back
- iv To provide a reserve of fire power

The performance of these tasks will necessitate that some platoons are always in action while others are moving in a series of bounds from one position to

The provision of machine gun covering fire will often prove to be the determining factor as regards the time required for staging an attack. The nature of the ground, the importance attached to surprise, the amount of covering fire required, and the distance machine gun companies are from their allotted fire positions will all affect the time required to reconnoitre and occupy machine gun positions.

4 *Orders from superior commander* — The commander of an infantry battalion detailed to attack should receive all available information regarding the enemy, and the dispositions and movements of friendly troops, he must also clearly understand the intention of the superior commander. In addition he will require information on the following points —

- i The frontage of his attack, the objectives, and any restrictions as to the line of advance of rifle companies
- ii The "starting line" and the time at which the leading troops of his battalion are to cross it (Sec 10 4)
- iii The situation on the flanks
- iv What artillery covering fire he may expect, and the details of the fire plan. It is important that he should be placed at an early stage in personal touch with the commander of the artillery supporting his advance, in order to co-ordinate the artillery fire with that of the machine guns
- v What artillery, if any, is to be placed under his command

- vi. If there are any brigade tasks for his own machine guns
- vii. What additional machine-gun covering fire he may expect, by what companies it will be provided, and under whose command they will be.
- viii. If there are any restrictions as to expenditure or dumping of machine-gun ammunition (Sec 4, 15)
- ix. If smoke is to be used, when and where it will be placed
- x. If any armoured fighting vehicles are to co-operate with his battalion in the attack
- xi. The general scheme for intercommunication, including liaison and points of junction with flank units on successive objectives

PRELIMINARY ACTION

5 When time is limited the battalion commander should, before proceeding to make his reconnaissance, arrange for the battalion to move to a suitable assembly position this must be under cover so that preparatory arrangements can be made undisturbed. He should also issue a short warning order to his battalion stating the task allotted to it, the time at which it will be required to attack the time and place at which he will issue his orders, and any other necessary details this will enable all concerned to think ahead and to make a preliminary study of the map and possibly also of the ground.

In the move to the assembly position the chief considerations will be concealment from air and ground observation, with a view to effecting surprise and avoiding casualties. In addition steps must be taken

ensure security the fact that other troops may be in action in front does not permit omission of this precaution but may modify the protective measures necessary in the circumstances

Meanwhile the area in which the battalion will operate will be reconnoitred especially to discover approaches to the assembly position routes thence to the starting line and good view points In addition all information of the enemy known to the troops already in action in front should be obtained Mounted officers and the battalion intelligence section will be available to carry out these reconnaissances

6 *Reconnaissance* — Having issued his orders for such preliminary action and moves as may be necessary, the battalion commander will carry out his personal reconnaissance The officers to accompany him will vary according to circumstances at any moment, but the following will usually be included company commanders commander of the supporting artillery, and

7 *Plan* — As a result of his reconnaissance the battalion commander will be in a position to make his

the main difficulties to arise. A reserve of mobile fire power will be of great value at this stage, machine guns and close support artillery will be very suitable for the purpose and the use of tanks will often be the quickest means of providing the infantry with the opportunity to press forward.

DISTRIBUTION

9 *The battalion* — In an attack the battalion will be divided into two echelons —

- i *Forward troops* consisting of that part of the battalion (i.e. rifle company or companies machine guns, anti-tank guns) which it is intended to commit to the attack.
- ii *Battalion reserve*, i.e. the rifle company or companies which the battalion commander retains under his own band, together with the machine guns and anti-tank guns held in reserve.

The attack will usually be carried out by one of the following methods —

- (a) The forward troops are directed against the furthestmost objective, and the battalion commander follows with his reserve, ready to take advantage of any success gained.
- (b) The leap-frog method, the leading troops capture and consolidate the first or some intermediate objective, while others pass through and capture the next one, and so on. As soon as each sub-unit has gained its objective it reorganizes and becomes available as a reserve, or for the attack of further objectives.

The latter method, which facilitates the maintenance

occasions it will normally be advisable to use two rifle companies in order to facilitate control in depth. (See Plate II)

Again, there may be some locality or feature of tactical importance on the battalion front, the possession of which would greatly facilitate the further advance to the objective and which the battalion commander decides to capture as his first bound. Such a task may often be suitable for one rifle company, arrangements being made to support it with all the fire resources at the disposal of the battalion. The protection of the flanks of the company will be specially important, and arrangements must be made to push forward machine guns, as soon as the locality has been captured, to assist in consolidation and to provide the covering fire for a further advance.

It must be clearly understood that the method to be adopted cannot be laid down. Stereotyped methods which ignore the use of ground are forbidden.

13 *Machine guns*—The duties of machine guns in the attack have already been enumerated (Sec 11, 3), the nature of these duties will necessitate guns being disposed in depth throughout the attack. As a general rule, therefore, they will be divided into forward, supporting and reserve guns, the respective roles of which are as follows —

- i *Forward guns* may be detailed to act in close support of the forward rifle companies and also to assist in consolidation of the ground won. In the former case their line of advance should be selected so as to allow of their opening fire quickly if the rifle companies are held up. If

these forms of fire. It must be concentrated chiefly on those portions of the front where the attack is to be driven home, and co-ordinated with the fire of machine guns.

A barrage is the simplest and most effective method of giving support when it is not possible to locate enemy positions with accuracy. The breadth of front which can be covered by a barrage depends on the number of guns available, since the barrage must have adequate density, the depth of ground which can be covered, or the time during which a barrage can be maintained, depends on the amount of ammunition available. It is

When the enemy dispositions are known in considerable detail, it may be effective and also economical of resources to employ concentrations of fire on selected areas, particular attention being paid to the probable positions of hostile machine guns.

15 Whatever form of support is adopted, the fire plan should, in the opening stages of the attack, be in accordance with a timed programme based on the anticipated rate of advance of the attacking troops, and supplemented by observed fire as far as possible. It is inadvisable to continue a timed programme beyond a limited depth when the enemy's dispositions are indefinite, as it is then liable to impede rather than to assist the attacking troops.

The battalion commander will indicate to the commander of the supporting artillery the localities to be neutralized in the initial stages of the attack. It is

- ii The tank starting line will be selected with this object in view Tanks should not be brought to a forward assembly position close up behind the foremost troops if there is any danger of such movement being located by hostile ground or air observation their mobility and speed will enable them on suitable terrain to reach their starting line in one bound from a backward assembly position and then to carry straight through with the attack
- iii In certain situations it may be advisable for the infantry advance to start before the tank attack is actually launched so that the infantry can work forward to suitable positions within striking distance of the objective Such action will also serve to cover the advance of the tanks If this method is adopted adequate covering fire will be provided on a wide enough front to make the infantry advance possible
- iv The available covering fire and smoke will be so distributed that adequate protection is afforded to both tanks and infantry at the times when it is most required

22 While tanks can be of great assistance to the infantry by subduing the enemy's machine guns and

usually be disclosed until the tank attack is launched, in such conditions their neutralization by the initial programme of covering fire cannot be certain.

battalion commander The section will collect its information by means of observation posts and of *liaison* parties within the battalion and sent to outside units The headquarters of the section should be with battalion headquarters the intelligence officer must arrange for a responsible N C O to carry out his duties in his absence

- ii *The anti tank platoon*—The nature of the country will determine the dispositions of the anti tank platoon In open country it may be necessary to place a proportion of the guns under the command of forward rifle companies, the remainder being kept in mobile reserve at battalion headquarters Should, however, certain ground afford a measure of protection owing to close country, woods, or other obstacles, it will then be advisable to concentrate the guns in those portions of the area which are favourable for tank action, in such cases the officer commanding the platoon should directly control its action

In any case, the battalion commander should endeavour to maintain the largest possible number of guns in reserve so that they will be immediately available to deal with a tank counter attack

- iii *Battalion headquarters*—The battalion headquarters should be divided into two portions: first, the personnel (signallers, orderlies, clerks, etc) at all times essential for command; second, the personnel who are

normally be carried on a vehicle with B echelon

When considered desirable by the brigade commander the B echelon transport of battalions will be grouped and moved under brigade direction

- v *Battalion S A A reserve* —Ammunition supply is dealt with fully in Chapter VII. The portion of the battalion S A A reserve not allotted to companies will be under the regimental serjeant major at the outset it will be retained in the hands of the battalion commander and will move as directed by him. It will be located as far forward as possible so as to facilitate the supply of ammunition to the forward troops

CONDUCT OF THE ATTACK

26 The task of the infantry in battle is to carry through the attack from objective to objective through out the whole depth of the hostile defences. Between the main objectives attacking battalions may have to carry out a series of minor attacks against intermediate objectives

The attack is therefore a progression from objective to objective, involving a series of assaults interposed with pauses for reorganization, clearing the captured defences, replacing the leading troops,

the momentum of the attack and accomplish his task without delay. If possible he will aim at holding the enemy frontally with the troops already in action while he attempts to strike from the flank.

30 If the support of the forward troops is held up the Battalion Commander will follow with his reserve or the bulk of the forward rifle company that is still making progress and move through the gap thus made. In this position he will be in a position to exploit successfully and will maintain the momentum of the attack. With the intervention of the battalion reserve his plans should be successful. The forward rifle companies will remain in contact to reach their objective.

31 When the objective of the Battalion has been gained the Battalion Commander will at once go forward to supervise the further action to be taken. He will ensure that forward rifle companies push forward and gain sufficient depth to hold the objective to be held against counter attack and will coordinate the measures being taken for consolidation (Sec 17). He will also arrange for exploitation provided that such action is in conformity with the intentions of the higher commander. In any case pistols will be pushed out to keep touch with the enemy and to guard against surprise.

Should the enemy be utterly and finally break down or his troops show signs of demoralization he will be given no respite in which to organize and establish a new position. The troops actually in contact must follow him and the battalion commander must launch his reserve in pursuit without waiting for further orders.

32 All commanders are responsible for taking steps

to ensure the security of objectives which they have captured

The security of intermediate objectives will be provided for by judicious dispositions in depth, and will not be allowed to interfere with the momentum of the attack, which will remain the first consideration (Sec. 2, 5)

12. *The rifle company in the attack*

1. *Preliminary action by the company commander* — Having received his orders, the company commander, accompanied by his platoon commanders when possible, will carry out his reconnaissance and prepare to issue orders at a suitable view point.

2. *Reconnaissance and plan* — Before deciding on his plan, the company commander must consider the following points —

- i The information about the enemy
- ii His objective and how he can best capture it
- iii The ground (Sec 6, 3)
- iv The flanks whether they are protected or can be defiladed from hostile fire by skilful use of ground if unprotected how he can best dispose his reserve so as to deal rapidly with a possible counter attack in flank
- v The covering fire to be afforded by artillery and machine guns and the action of tanks if co-operating
- vi The number of forward platoons necessary to capture his objective
- vii The strength of his reserve and its most probable employment

3. *Forward company*—A forward rifle company in the attack will be divided into —

- i Forward platoons
- ii Company reserve

The number of platoons to be detailed as forward platoons cannot be laid down

The whole front need not be covered by men. On occasions one forward platoon will suffice, as for instance when the ground is open, and little is known about the probable resistance to be encountered, the company can then be disposed in considerable depth so that the company commander retains power of manœuvre

On other occasions it may be necessary to have three platoons forward, as for instance when the front is wide and the ground enclosed (See Plate III)

The guiding principle is to employ the smallest number of forward platoons consistent with the efficient execution of the task, the distribution of the company must be in depth so as to retain power of manœuvre. Definite objectives and tasks will be allotted to each forward platoon

Platoons in company reserve will be kept in as concentrated a formation as the ground and the enemy's fire will permit

4. *Company in battalion reserve*—A rifle company in battalion reserve will move in a formation which will minimize the risk of casualties and facilitate control by the company commander. The company, being in reserve, will act under the orders of the battalion commander; but its commander must not hesitate to employ it without further orders to cover an open flank, to stop a counter-attack, or in any other emergency. Recon-

naissance will be important in order that touch may be kept with the situation (Sec 1, 7)

5 *Issue of orders*—The company commander will issue his orders verbally if possible in view of the ground over which the attack is to pass. Landmarks must be pointed out and the compass bearing of the general direction of the attack given in order to guard against loss of direction. Watches will be synchronized. Platoon commanders will make notes of the essential points such as the intention, company objective, starting line and time to cross it, the fire plan and special light or success signals. These must be checked over.

6 *Action during the attack*—In the preliminary stages a rifle company will be moved in as concentrated a formation as the enemy's fire will permit without undue loss. Fire should not be opened unless it is found that progress cannot be made without it. It will be necessary for the company as it approaches the enemy to be opened out gradually, gaps being large between platoons rather than between sections. Finally the time will come to extend the sections and bring every weapon into action. Here again gaps should occur between sections rather than between men who should not be extended beyond the maximum interval at which they can be controlled by their section commander.

7 The forward platoons will advance on their objective at a steady pace. Men should be restrained from doubling when it is not necessary. Their energies should be conserved for the close fighting which will follow. When the objective is captured the company commander will arrange to clear it and at the same time push for

ward patrols to keep touch with the enemy; he will also adopt suitable dispositions for holding the ground he has gained, and reorganize his company.

If a fresh objective is to be captured, the company commander may often find it advisable to use one or more of his reserve platoons for the purpose, drawing into reserve the forward platoons thus replaced, by such action the vigour of the attack will be maintained with the minimum loss of time. *The forward platoons* may on occasions be quite capable of continuing the advance provided additional fire power is made available, but they may be in such a position that it is not possible to explain to sub unit commanders the details of the fresh fire plan, time at which they are to advance, objectives, and other points, sections may be in exposed positions under heavy fire, and it may be difficult or impossible to collect their commanders. In such situations it will generally be advisable to leap frog reserve platoons through the forward ones.

If, however, the additional impetus for the attack is to be provided by tanks the forward platoons can be used to continue the advance, as in this case the details of the plan need not have to be communicated to the junior leaders, who will automatically lead their sub-units forward the moment the action of the tanks makes such movement possible (Secs 8, 16 and 17, 20).

8 If the forward platoons are checked they will take up positions from which they can develop fire power in order that units elsewhere may advance. They must pin the enemy to his ground with fire and endeavour to create weak points in his defence by working round the flanks of his centres of resistance. The company com-

11 then use his reserve to push through where is weakest and thus outflank those portions the defence which are holding up the advance should be impracticable he will attempt to regain superiority fire with a view to resuming his own advance later, assisting the advance of other troops

9 Should a forward platoon become engaged in clear a small post in the enemy's defences which is still out and so drop behind platoons on either flank which have been able to advance the company commander must push forward one of his reserve platoons to replace it, through either of the gaps made in the defence by the successful platoons As soon as the platoon engaged in clearing up has completed its task it will reorganize and follow on as the company reserve

10 The company commander will keep a reserve as long as possible when he has to employ it, he will form

plato
men
own

commander when his whole company is finally absorbed in the fight and do everything in his power to prevent his company becoming definitely held up If on the other hand the company should meet with rapid success and an opportunity presents itself for the effective employment of the battalion reserve he will inform the battalion commander of the situation giving him particulars as regards covered lines of approach and his opinion regarding the most suitable action for the battalion reserve

11 When success can be exploited no longer or when the limit set by the higher commander has been reached the company commander will adopt suitable dispositions for holding the ground gained

13 *The rifle platoon and section in the attack*

1 The platoon is the smallest sub-unit which can be divided into interdependent bodies each capable of fire or manœuvre. These interdependent bodies are the sections. The main distinction between the rifle section

by volume of fire

2 *Reconnaissance and plan*—Once he has received his orders the platoon commander may not have any further opportunity for reconnaissance. Therefore before leaving the company commander he should ask for information on any point upon which he is in doubt and which further reconnaissance might possibly have revealed.

He will then decide on his plan. The line of advance for each platoon will generally be laid down by the company commander. The main problem confronting the platoon commander will therefore be to decide the disposition of his sections, and how to make the best use of the ground over which his platoon is to advance and at the same time maintain direction.

3 *Formations*—The formation adopted should be one which will minimize losses and enable the platoon commander to maintain personal control and make the best

possible use of the weapons at his disposal. On no account should the platoon become so extended that he cannot control it (Sec. 3, 6). The ideal to be aimed at is that sections should be under his voice control though this will not always be possible.

One forward section will often be sumitted when the ground is open, the enemy weak and little is known about the strength of his defences. A platoon so disposed has great power of manœuvre and can adjust its dispositions to the situation as it develops.

When the platoon is in a side of the country enclosed, it will be necessary to employ two or possibly in extreme cases three forward sections with three sections forward, the platoon commander's power of manœuvre is greatly restricted.

Sections in position reserve will be moved in as soon as centralized fire becomes effective and the enemy's fire will permit. See Fig. III.

4 Local protection. When the enemy has not been definitely located protection is provided by dividing one reserve section into two equal parts of the platoon at a sufficient distance to the rear.

Should the threat be expected to be considerable to push out section 1 to the rear and section 2 to the front. The platoon deploys as it is necessary to maintain security.

Further protection is provided by the use of sections are contained in the rear.

5 Platoon heavily engaged. The platoon commander will move where he can best direct the action. This position before deployment. At the head of his platoon at deployment usually with or near his reserve sections.

6. Supporting fire—The fire to make movement possible in the face of strong opposition is supplied primarily by the machine guns and the artillery, particularly in the initial stages of the attack. But local situations will constantly arise, which can be dealt with promptly only by the fire of platoon weapons. In such circumstances the light automatic acting under the control of the platoon commander enables him to direct a volume of concentrated fire on the enemy holding him up, and so avoids the delay involved in communicating with machine guns and artillery in rear, these situations are the rule rather than the exception in the later stages of the attack. H E and smoke rifle grenades may also be used to facilitate forward movement (Sec. 4, 8 and 9)

A forward platoon will be prepared to do everything possible with its own weapons to cover its advance and finally to turn the enemy out of his positions by assault.

The movement of the forward sections must be supported by the fire of sections in platoon reserve, if possible from positions on the flanks: light automatic sections are particularly suitable for this role. The platoon commander should arrange for this covering fire in his initial plan and orders, but section commanders

the final assault.

7. *Issue of orders.*—The platoon commander will issue his orders verbally. These will include:—

- i All available information about the enemy, and friendly troops operating on the flanks.
- ii. His intention.
- iii. The objective This will be actually pointed out. Landmarks also will be given to assist in maintaining direction, and attention drawn to obstacles which might interfere with movement.
- iv. The disposition of the various sections and their tasks
- v The nature of the assistance which may be expected from artillery, machine guns, tanks and smoke
- vi His own position during the attack, and the location of company headquarters

8 *Action during the attack*—The action of a forward platoon in the attack is described in Sec 12, 7 and 8 The aim of the platoon commander will be to advance as close as possible to the enemy's position without undue loss, and without having to check the speed of the attack by opening fire When a further advance is no longer possible without fire from the platoon weapons, he will continue to push boldly forward by a skilful use of fire, ground, and manœuvre

On approaching the enemy position, he should attempt to penetrate between the defended localities, blinding them by smoke grenades if necessary Lines of advance should be used which are not swept by the enemy's fire, and every opportunity taken to attack the enemy from a flank Having thus penetrated to close quarters and overwhelmed the enemy's fire, the platoon

carry out the assault (Sec 2, 4) After the assault the platoon commander will reorganise the platoon and

the maximum fire power can be produced. platoon and section commanders will ensure that every weapon in the platoon is used to the best advantage. Having done this the platoon commander must not rest content, he must endeavour to get his men forward whenever such action is possible without excessive casualties. By reconnaissance forward and to the flanks, it will often be found that a way exists where none seemed possible.

9 *The section in the attack* — Details regarding the action of a section in the attack and the duties of its commander, are contained in Infantry Section Leading

14. *The machine gun company in the attack*

1 *Preliminary action by company commander* — Before starting out on reconnaissance with the battalion commander, the company commander should give warning orders to his company, so as to save time. These may include —

- i. Warning of the attack contemplated, and the probable time for preparation
- ii Forward rendezvous for the company, if separate from that of the battalion
- iii Rendezvous for platoon commanders, and time
- iv His own intended action

2 *Reconnaissance and plan*—Unless lack of time makes it impossible, the machine-gun company commander should make a further reconnaissance with a view to deciding the number of guns required to carry out the various tasks given him, and the best areas for purposes. For this he must know the extent of each ~~area~~ and the areas available for gun positions. He will then be in a position to sub-allocate his platoons as forward supporting and reserve guns. He should select assembly positions and lines of approach for his platoons and lines of advance for forward guns.

3 *Issue of orders*—Orders will be issued verbally platoon commanders making notes of the essential points. Sufficient detail should be given concerning the method of attack of rifle companies the action of supporting arms and how smoke is to be used as will ensure intelligent support by machine-gun platoons throughout the attack.

Each supporting platoon should be given its role and tasks gun position area rates of fire and the number of belts to be fired.

Platoons detailed as forward guns will be given their assembly positions and told their line of advance and any subsequent role.

Administrative details will include instructions as to dumping ammunition position of ammunition reserve and arrangements for refilling platoon vehicles during the progress of the attack.

The distribution of any signallers allotted to the company will be given as well as the location and line of advance of company head quarters.

4 *Co-ordination and control*—The company

mander must keep in close touch with the general situation as well as with the movement of his platoons, so that he can, if necessary, quickly allot fresh tasks as the attack progresses. He should, in addition, endeavour to ensure close liaison between his platoon commanders and the rifle companies they are supporting, notifying the whereabouts of the one to the other as opportunity occurs.

He will control the supply of ammunition, regulating the forward movement of vehicles to platoons, and arranging meeting places for replenishing.

15. The machine gun platoon and section in the attack

1 *Platoon commander's reconnaissance and plan* — In enclosed country, time will often not allow the company commander to do more than allot tasks from the map, and the selection of the platoon area or line of advance must be left to the initiative of the platoon commander. In any case, as soon as he has been allotted his task, the platoon commander will order his platoon to a forward rendezvous near the probable assembly or gun position, and will himself proceed in advance to reconnoitre, accompanied by his section commanders, whenever possible.

Caution will be necessary in carrying out these reconnaissances to avoid disclosing to the enemy that pre-

guns.

2 *Forward guns* will have the task of giving close support to the rifle companies to prevent their advance being checked. On the capture of the objective, they may be detailed to assist in consolidation or to act as supporting guns to a further advance. Reconnaissance is, therefore, necessary to decide on —

- i An assembly position under cover from air and ground observation. If no cover is available the platoon must be dispersed.
- ii A line of advance. To avoid the use of overhead fire, this should be to one flank or other of the line of attack of the rifle companies and, where possible, within reach of high ground.
- iii Suitable positions along the line of advance from which fire can be opened, and movement made by bounds.

3 *Supporting guns* will have in co operation with the artillery, the primary task of neutralizing by fire known enemy posts or areas suspected of concealing hostile troops. They will fire in accordance with a timed programme or their observation of the advance of the rifle companies. In the former case they must be prepared to continue firing even if they or their target are obscured by smoke, mist, dust, etc. This entails certain preparations being made as well as detailed orders being given as to the periods during which fire is to be maintained on particular targets.

When this task is completed or the attack passes beyond their range they will be prepared to act as down in Sec 11, 13 ii.

Over and above any definite targets or areas neutralized by fire, supporting guns should be

arcs within which to watch for unexpected developments

Concealment from enemy observation is of primary importance.

4 *Reserve guns* — Guns held in reserve or reverting to reserve after the completion of another task, will usually be kept mobile ready to undertake any unforeseen duty or to move forward to act as forward or supporting guns in a later stage

5 *Issue of orders* — All ranks will be told what is known of the enemy, the intention of the commander, the objectives of the rifle companies, and the nature of the artillery support. Forward platoons should know their line of advance and supporting platoons their targets, the arc within which unexpected targets are to be engaged, and any restrictions as to time or rate of firing. All ranks should be informed of any subsequent role which has been allotted

6 *Co-ordination and control* — Before giving his orders, the platoon commander will, if time permits, get into touch with the nearest rifle company commander to make sure that his fire support is in accordance with the plan of attack as finally decided

When a platoon is advancing its commander should be ahead, keeping touch with the rifle company commander and selecting in advance suitable positions from which to support the attack if required. The platoon sergeant will lead the platoon

When both his sections are in action independently

main characteristics are the increased strength and depth of the enemy's defences furthermore as the two sides will be in close contact when the attack is delivered the attacker will possess a more detailed knowledge of the enemy's dispositions and organization

Success will depend chiefly on the care and forethought devoted to the plan and arrangements for attack and on the amount of artillery and tank support available The commander will be in a position to allot definite intermediate objectives these may often coincide with the general objectives

the attack

2 Unbroken wire obstacles when used in combination with machine guns neutralize the tactical mobility of infantry in daylight Wire is best dealt with by employing tanks to crush it Should tanks not be available artillery and mortars can be used to cut the wire, but this will entail the sacrifice of surprise In the latter case the infantry is responsible for indicating to the artillery where the gaps are required, it is also responsible for keeping open the gaps when cut and preventing their repair by the enemy Constant patrolling and fire from machine guns and other automatic weapons will be necessary

It is usually impossible to prevent the repair of rearward wire obstacles gaps in such wire are often best cut during the preliminary bombardment or during the earlier stages of the attack

3 The infantry "assembly positions" should be

under cover so that the men can rest and carry out their final preparations before moving forward to the forming up place

and clear of the zone of his protective barrage if known. The forward move from the assembly position to the forming up place should be made by a covered approach or else under cover of darkness or mist. Ample time will be allowed for the movement and guides provided to lead platoons to their positions.

The forward edge of the forming up place will be the starting line (Sec 10 4) it should run along a feature easily recognizable on the ground or else be marked by tapes. Hostile patrols will be driven in before the

can be seen from the air

5 In an attack under these conditions the infantry depends principally on the other arms to produce the fire necessary to make its advance possible. This factor must receive careful consideration when choosing the line of attack. The normal form of covering fire will be a barrage organized in several belts of which that nearest to the attacking infantry will be formed by the fire of the greater portion of the field guns. The fire of this belt will be continuous and move forward by regular lifts on a definite time table. Machine-gun fire will be superimposed on part of the artillery barrage. The rate at

which the barrage is moved forward depends upon the ground and the amount of resistance anticipated; it may vary from a rate of 100 yards in two minutes to

has lifted off it and before the enemy has time to man his defences. The infantry must therefore keep as close as possible to the bursting shells of the artillery barrage, and realize that the danger incurred from a shell bursting short is negligible in comparison with the risks run by following too far behind the barrage.

During the progress of the operation the garrison of certain enemy localities may continue to fire in spite of the barrage, or the advance of some portion of the attacking infantry may be delayed and the protection of the barrage lost. If this occurs, the infantry must fight its way forward with its own weapons assisted by such close support as can be given by other arms, until it can come up with the barrage again.

6. If tanks are used in the initial attack, they will precede the infantry and make gaps in the enemy's wire. The leading infantry must follow the tanks on to the objective as closely as possible.

7. The forward rifle platoons should usually be deployed with the rifle sections leading; the duty of light automatic sections will be to protect the flanks of the rifle sections and to deal with enemy machine guns or riflemen who may emerge from cover after the forward sections have passed on.

Communication trenches will be cleared by troops

The general line for consolidation will have been selected from the map and may require revision; battalion and company commanders will be active in seeing that the best defensive arrangements are made for the security of the ground won. Patrols will be immediately pushed out by forward rifle companies to keep touch with the enemy and to cover consolidation.

3 The counter attack may be by fire in the first instance. Of first importance therefore is the thinning out of the troops: all those not required to hold the ground being drawn into reserve to rest and reorganize.

The better the defensive plan and the more careful and complete the co-ordination of fire, the fewer will be the troops required to hold the ground, adequate thinning out is the logical outcome of improved defensive arrangements.

Machine guns and anti tank weapons should be sent forward at the earliest possible moment to assist in the defence, as this will reduce the riflemen necessary to a minimum, the latter are best held in reserve, available for a further advance or to meet a counter attack.

Artillery observation officers should reach the objective soon after the forward rifle units, and the battalion commander will ensure that the available artillery and machine gun fire is co-ordinated (Sec 5, 7). Close support artillery should remain under the battalion commander and assist in consolidation.

When the enemy is known to have tanks the occupation and preparation for defence of localities, which offer facilities for anti tank defence, will be of great importance.

Any tools likely to be required by the attacking

infantry will be arranged for beforehand plans must be made for sending them forward so as to reach the objective soon after it is captured although it may not be possible to carry out organized digging until nightfall

4 Reorganization should be carried out automatically, and without orders having to be issued Companies and platoons should avoid concentrating for this purpose, since such action will serve to make them more vulnerable to enemy artillery action

5 If fresh troops are to pass through and continue the advance the battalion commander will arrange to pass on to their commanders all available information, and to keep in touch with their action the battalion intelligence section will be of use in this respect

He will also be prepared to provide any covering fire that may be required and to protect the flanks of the advancing troops should such action be necessary In any case whether a further advance is to be made or not the battalion commander will ensure that touch is kept with the enemy and with the action of units on his flanks reconnaissance in all directions must be constantly carried out (Sec 1, 7)

18 Raids

1 A raid is an attack with a strictly limited and temporary objective from which the attacking party returns to its own positions after achieving its object

2 Raids are of use to capture prisoners for intelligence purposes and to obtain identifications or other information regarding the enemy they may also be carried out with the object of damaging the enemy defences During

protracted operations raids are a useful means of harassing the enemy and thus weakening his morale

If the main purpose of a raid is to secure information by the capture of one or two of the enemy's soldiers, this object may sometimes be achieved more easily and with less loss by the use of fighting patrols

3 To have a good chance of success raids must be planned in great detail They should also be rehearsed whenever possible

No definite rules can be laid down for the execution of raids since their purpose and the local conditions vary widely Surprise is essential to their success Artillery co-operation will usually take the form of a short, sharp bombardment which, as the assault is made, will lift and form a protective barrage in front and on the flanks of the raiding party Machine guns should also co-operate by sweeping communication trenches and lines of enemy approach to the locality raided

The plan must include arrangements for the withdrawal of the raiding party on completion of its task The whole operation should be carried out in accordance with a pre arranged time-table, a signal for withdrawal may be necessary in addition

The infantry who have remained in position will cover the withdrawal, assisted by the artillery

4 The troops taking part in a raid must wear no badges and carry no papers by which they might be identified should they fall into the hands of the enemy.

CHAPTER III

DEFENCE

19. *General considerations*

1. To stand on the defensive entails a temporary sacrifice of the initiative with the consequent disadvantages. The enemy is given a free hand to choose the time and place of his attacks, he can concentrate at will, whereas defensive action entails a certain measure of dispersion.

A commander must, therefore, make every effort to seize and retain the initiative, for once it is lost he will be forced to adopt a defensive attitude.

2. On the other hand, the offensive must never be assumed merely for its own sake. A commander may sometimes decide to adopt a defensive attitude at the outset of a battle if he considers that he will gain a decisive success with more certainty and less loss by inducing his opponent to make the first attack. Other occasions when a defensive attitude may be temporarily necessary or even advantageous, are when —

- i. It is necessary to economize troops on one portion of the front so as to increase the numbers for offensive action elsewhere.
- ii. Time must be gained for the concentration of the necessary troops and resources for an offensive.
- iii. It is essential to deny to the enemy some area of importance.

- iv Disparity in numbers or armament precludes the assumption of the offensive with any reasonable prospect of success

In all these cases defensive action is temporary, with a view to offensive action at another place or time

3 When a commander decides to stand on the defensive his action will be governed by four main factors whatever the size of the force —

- i *Time* —To accept battle under the most favourable conditions time is necessary so that the available fire power can be organized and used to the best advantage

The aim of the defence should be to gain this time by the skilful handling of advanced troops by demolitions on the main lines of approach and by the *concealment* of defences so as to make the task of reconnaissance as difficult as possible for the enemy

- ii *Fire* —Fire is the predominant factor in modern war. In attack superiority of fire is essential to success conversely, the aim of the defence must be to retain the power to use its weapons effectively If sufficient time has been gained to enable the position to be well organized, and dispositions are carefully concealed, the enemy will be forced to distribute his fire instead of concentrating it in turn against individual defences Moreover, if the defences have been strengthened by wire the enemy will be compelled either to concentrate tanks to crush them or else to sacrifice surprise to a certain extent by destroying them with artillery fire

On the other hand in mobile operations time and resources may be insufficient to enable elaborate defences to be organized in depth. Under such conditions concealment from air and ground observation and protection against tanks are of great importance. If the defences are skilfully concealed the enemy will be forced to disperse his fire by applying it to areas. So long as infantry remains unshaken by artillery fire or tanks it can given good visibility repulse an infantry attack with its own weapons.

It will be seen that defensive dispositions are subject to modifications according to the time available for preparation and to the weight of artillery fire which it is anticipated the attack can produce. The greater the weight of the artillery fire which it is considered may be brought to bear by the attack the greater must be the depth of the position, in order that the main infantry defences may be sited out of direct view from the enemy's artillery observation posts.

On the other hand against an enemy known to be weak in artillery depth may be sacrificed in order that full play may be given to the infantry weapons of the defence.

- iii *Surprise*—Surprise is as important in defence as in attack.

The defence depends largely on concealment to effect surprise. The initiative rests with the attacker but he requires observation to turn it to good account (Sec. 9, 5), the

can more easily conceal his dispositions and intentions because movement is less essential to the defence than to the attack. The organization of the fire plan should not be prematurely disclosed. The attackers should be induced to advance into areas in which they may be caught unawares by fire. They will thus be surprised, and opportunity for the delivery of counter-attacks will then be created.

Depth is essential to localize the effects of a successful surprise attack, in order that the defences in one sector may not all be overwhelmed by fire or overrun by tanks at the same time.

- iv **Control**—The defender must be prepared to act quickly as soon as the attacker has disclosed his intention. Control is therefore important. Counter-attacks should be delivered by troops specially allotted for the purpose and in such directions as the commander may have decided are the most favourable. To ensure control these counter-attack troops will be assigned definite tasks. The attacker should be prevented from anticipating where they are located.

It will be clear from the foregoing that, in defence, concealment is of great importance, this will be especially the case when the enemy has air superiority. Whenever possible, a position should be examined from the enemy's point of view to ensure that it provides the necessary concealment.

4 **Reconnaissance** is as important in defence as in attack. When the two forces are not in contact, aircraft and mobile troops will discover the direction of

movement and the strength of the hostile columns, the main forces will not be deployed until the enemy's line of advance has been ascertained. A force which keeps the enemy under observation, and is held in hand covered by the necessary protective troops, is able to resume the offensive itself, or, alternatively, to be disposed in the best advantage with a view to accepting battle. As closer contact is obtained all available means to discover the enemy's intentions must be employed, and constant patrolling will be carried out.

5 In the case referred to in paragraph 4, above, a commander will generally foresee, in good time, the need to assume the defensive, and will be able to reconnoitre, select, and organize a position thoroughly.

Occasions may, however, occur in mobile operations when a commander will be forced to adopt the defensive at short notice and to occupy positions hastily. In such situations the frontages allotted to formations and units may often be wide in proportion to the numbers available to hold them.

Consequently depth will have to be sacrificed to some extent in the initial stages. It will, however, be regained as the organization of the defences becomes improved, since this will allow of the forward positions being held by fewer troops.

6 In any case, whether a position is occupied at leisure or hastily the initial plan of the commander must be so framed that given time and labour an ^{adequate} position can quickly be formed. If the initial plan is sound, the time and labour will both be used to the advantage from the outset.

7 All ranks must understand that, once battle is joined, the troops allotted to the defence of a post or locality are responsible for holding it at all costs, and for inflicting the greatest possible loss upon the enemy.

The fact that a neighbouring post or locality is captured must on no account be considered a reason for withdrawal (Sec. 1, 9).

20. The selection and organization of a defensive position

1 The first consideration will be to determine what ground is vital to the conduct of the battle. When this has been decided, the defensive position will be selected. The tactics and armament of the enemy considered in conjunction with the nature of the ground will indicate which of the following considerations should carry most weight —

- i. Facilities for securing the close co-operation of all arms and for permitting covered movement within and in rear of the position are of importance
- ii The framework of the defence will be the artillery and the machine guns. The foremost defences must be far enough in advance of the localities selected for artillery observation to ensure that these localities will not be captured and the eyes of the defence blinded as the result of a local success by the enemy
- iii. Observation of the ground, over which the enemy must advance during the earlier stages of the

attack, or which cannot be covered by the fire of rifles and light automatics, is necessary for artillery and machine guns and for infantry intelligence sections

- iv There should be ample room within and in rear of the position for manœuvring reserves; the ground should afford facilities for counter-attacks by which means alone is active defence made possible

2 Full consideration will be given to anti-tank defence. It will be important to make use of natural obstacles wherever they exist, both to protect the infantry and to set free a greater number of anti tank weapons for the more vulnerable parts of the position. River lines and woods will be of special value in this respect. It must be remembered that an obstacle such as a river loses a great part of its value once the enemy is able to reconnoitre it, this is particularly the case with regard to a partial obstacle, and in such cases it is usually best to establish posts in front of the obstacle, to prevent the enemy reconnoitring it. An attacker will hesitate to launch his tanks against a position containing an unreconnoitred obstacle. He will probably be forced to carry out a special operation to gain contact with the obstacle, and in doing so may disclose his tank resources and his intentions.

3 It will be the duty of the commander of the force to define the ground vital to the defence. On occasions it may be desirable for him to indicate, in addition, the general line of foremost defended localities. Infantry brigade and unit commanders will, in their turn, name the localities which are to be held as the foremost line of

defence, the lower the commander the greater the detail he will give

The line of foremost defended localities, when finally determined, becomes the front edge of the defended system, the defence is built up in depth in rear of it, and the fire of all available weapons is co-ordinated with a view to preventing the enemy reaching it (see Plate IV)

4 Troops may, if considered necessary, be pushed out in advance of the foremost defended localities with a view to guarding against surprise. Their role will be observation and, if attacked they will retire through the defended localities, a few detachments pushed out by forward infantry battalions may often be all that is required, their role will be essentially a mobile one

5 In other cases, troops may be advanced to resist or delay the enemy until the position is occupied or for the purpose of deceiving the enemy as to the true positions selected. Their role, being resistance, will entail the occupation of suitable positions and arrangements will be made for their effective support

6 In all cases clear and definite orders must be given to bodies of troops pushed out in advance of a defensive position, as to their role and time and method of withdrawal.

7. The troops allotted to the immediate defence of a position will be distributed according to the accidents of the ground in such a way that they can best develop the fire of their weapons. This will usually result in the occupation of a chain of localities, which mutually support each other by frontal, flanking, or enfilade fire

and covered by the fire of the longer range weapons echeloned behind them

Behind these localities reserves will be distributed in depth to —

1. Give depth to the defence
- 11 Ensure protection for the flanks of the forward localities
- 111 Counter attack

The reserves must be ready either to occupy positions where they can use their weapons or to deliver counter attacks (Sec 26) Until required for the latter purpose they will organize a second series of defended localities which can be developed later if necessary

The whole system will be joined up gradually by fire and communication trenches as time permits

8 In mobile operations resources will seldom allow of a position being held strongly throughout its length. Also it will not usually be possible to organize more than one zone of fire defences. forward infantry brigades will organize this zone with the resources at their disposal

of each locality, particular attention being paid to the protection of the flanks and mutual support throughout the system of defence. Each locality will be organized for all round defence and within it the troops will be distributed with due regard to concealment in positions from which they can best develop the fire power of their weapons

9 A defensive position will be divided into divisional

and brigade sectors, brigade sectors will be sub-divided amongst the battalions of the brigade. Dividing lines between sectors should as far as possible be indicated by *easily recognizable features* and will be carried, from points in front of the position back through the defences to the rear of the position. The troops holding each sector will be distributed in depth and provide their own reserves. Important tactical features or likely lines of advance by the enemy should be included wholly in one sector and special arrangements for their defence made by the responsible commander.

The factors affecting the frontage which can be held by the troops allotted to the actual defence of a position are as varied as those which affect the question of frontages in attack. The question of control must be remembered (Sec 3, 6). Generally speaking a wider frontage can be held by a formation or unit in defence especially when the nature of the country enables the fire of infantry weapons to be used to the best advantage than can be taken up in attack. The more enclosed the country the smaller should be the frontage allotted (see Plate IV).

10 Every commander must organize his fire plan as thoroughly as the time, the conditions and the resources at his disposal will permit, so as to use his artillery, machine gun, anti-tank, rifle, and light automatic fire in co-operation to the best advantage.

The machine gun is the most valuable of all weapons in defence against an infantry attack. Machine guns should, therefore, be so organized in depth that, together with the artillery, they form the framework

of the defensive system, they should be sited to sweep with enfilade or oblique fire the probable lines of enemy approach and to protect localities occupied by rifle companies. They will normally occupy direct fire positions so as to be able to engage rapidly any target which may appear within the arc of fire allotted them. Concealment from enemy observation is of primary importance. It will be difficult for the enemy to carry out a surprise attack in daylight, as he will be unable to conceal his preparations from air observation, the most probable time of attack is therefore at dawn or at night. In view of this factor, and owing to the increasing use of smoke, the fire of the defence must be so organized that it can be maintained even when observation of hostile movement is impossible. Artillery and machine guns alone are capable of maintaining accurate fire under such conditions, but only after preparations have been made in daylight.

The artillery fire plan, the siting of the defended posts, and the placing of wire obstacles, if available, must all be co-ordinated with a view to forcing the enemy as far as possible into the arcs of fire of the machine guns.

11 It will be impossible for troops in defence ever to be certain when or where the enemy will attack. The defence must, therefore, endeavour, firstly, to interfere with the forward movement and assembly of the hostile infantry or tanks; secondly, to disorganize them when forming up for attack; and lastly, to sweep all approaches with fire and protect the foremost infantry localities with such a belt of fire from all weapons that the enemy will be prevented from penetrating into the position.

Such a system entails alternative co-ordinated schemes

and brigade sectors, brigade sectors will be sub divided amongst the battalions of the brigade. Dividing lines between sectors should, as far as possible be indicated by easily recognizable features and will be carried, from points in front of the position back through the defences to the rear of the position. The troops holding each sector will be distributed in depth and provide their own reserves. Important tactical features or likely lines of advance by the enemy should be included wholly in one sector and special arrangements for their defence made by the responsible commander.

The factors affecting the frontage which can be held by the troops allotted to the actual defence of a position are as varied as those which affect the question of frontages in attack. The question of control must be remembered (Sec 3, 6). Generally speaking a wider frontage can be held by a formation or unit in defence especially when the nature of the country enables the fire of infantry weapons to be used to the best advantage than can be taken up in attack. The more enclosed the country the smaller should be the frontage allotted (see Plate IV).

10 Every commander must organize his fire plan as thoroughly as the time, the conditions and the resources at his disposal will permit, so as to use his artillery, machine gun, anti-tank, rifle, and light automatic fire in co-operation to the best advantage.

The machine gun is the most valuable of all weapons in defence against an infantry attack. Machine guns should, therefore, be so organized in depth that together with the artillery, they form the framework

of fire which can be put into operation at short notice by means of a simple order or signal

Fire is thus classified under three heads —

- 1 *Harassing fire* is directed against enemy headquarters and movements with a view to interfering with preparations for attack. By day it should be confined to observed shooting upon important movements. By night programmes should aim at obtaining maximum effect from a relatively small expenditure. Orders for such fire will be issued by division or brigade headquarters which will specify the amount of ammunition to be used. Artillery is the most suitable arm to use for this task but machine guns can also be employed. The machine gun ammunition required should be dumped and the vehicles refilled.
- 2 *Counter preparation* is fire directed against the enemy's probable forming up places and forward communications when an immediate attack is anticipated. Its object is to disorganize the enemy troops while they are still deploying and, if possible to break up the attack before it is launched. It takes the form of short intense bursts of fire concentrated on small areas in accordance with a definite pre-arranged plan. If the enemy can be seen assembling or deploying he should be engaged with observed fire in preference to the pre-arranged programme.

Counter preparation depends for its effect mainly on surprise, and it is undesirable to

disclose prematurely the areas on which it will fall. Consequently, it will be clearly laid down who is the authority responsible for ordering fire to be opened, this will usually be the divisional commander.

Such fire is primarily an artillery task, but machine guns should also be used to the greatest possible extent. Machine-gun ammunition should not be dumped for the purpose, but arrangements must be made to replace at once what is fired.

- iii *Defensive fire* is delivered to stop the advancing enemy. It will be directed on to the assaulting troops and reserves whenever observation is possible. In case observed fire should be impossible arrangements must be made so that fire can be put down at any time on selected portions of the front or in concentrations on lines of approach. This fire should be placed as close to the general line of foremost defended posts as considerations of safety and other requirements permit, so that the greatest number of assaulting troops will have to pass through it. The framework of the defensive fire plan is the belts of machine gun fire. After these have been worked out, concentrations of artillery fire will be arranged to fall upon approaches, which cannot be dealt with suitably by machine guns. Defended localities should be sited, with due regard to concealment, so as to obtain the maximum protection from the combined artillery and machine gun

fire plan the fire of rifles and light automatics will be employed so far as visibility will allow to fill in the gaps in the belts of machine gun fire

The fact that the enemy is actually advancing to the assault will be notified by infantry or artillery observers by means of light signals and will be confirmed as soon as possible by other means Rates for defensive fire will be laid down by divisional headquarters a definite period should be fixed after which unobserved defensive fire should cease or revert to counter preparation

On no account must defensive fire be opened merely in anticipation of an attack counter preparation is then the correct course to adopt If the enemy penetrates the forward defences defensive fire will be brought back only with the consent of the commander of the infantry brigade sector concerned or if direct observation is possible It is important that rearward observation posts should be established so that observed fire may be maintained upon troops that have penetrated the defences even if the more advanced observation posts and communications have been overrun by the enemy

12 *Machine guns*—The distribution and siting of machine guns will be affected by the tasks allotted them Machine gun commanders should therefore be given early instructions as to the parts they are to play otherwise changes of position may be necessary

All guns will be allotted arcs of fire within which when observation is possible they will engage any hostile movement seen. Sub-unit commanders will use their discretion as to engaging exceptionally vulnerable targets appearing outside their arc. In addition those guns, which can bring fire to bear in advance of the foremost defended localities will be given fixed lines on which they will fire when defensive fire is called for and observation is impossible.

Machine guns should be divided normally into forward, supporting and reserve guns (Sec 23). The siting and handling of each category differ and are given in detail below —

- i *Forward guns* should be sited so as to sweep with enfilade or oblique fire the probable lines of enemy approach and thus protect the rifle company localities. For this purpose they should be given arcs of fire at once and then fixed lines later after the actual positions of the forward rifle posts have been decided. They will not be allotted counter-preparation or harassing fire tasks.

in emergency by the reserve. More usually they will be in mobile reserve *i.e.*, on wheels.

All machine-gun commanders will be prepared on their own initiative to use their guns, wherever sited, to support a counter-attack.

13 The infantry brigade commander will co-ordinate the machine-gun plan by —

- i. Allotting tasks to battalions.
- ii Ensuring that no gaps are left in the belt of fire especially at the flanks of formations and units
- iii Ensuring that the fire is co-ordinated with that of the artillery.

As the position becomes more highly organized brigade, and even divisional control of the machine-gun defence will tend to increase.

14 *Co-ordination* — The co-ordination of the defensive framework is of vital importance. It will be the duty of commanders to ensure that the defensive arrangements made by formations and units throughout the whole position are so joined up that, wherever the enemy may penetrate, he will be met by fire and that any further advance he may have in view will have to be organized while still under fire.

Higher commanders will be responsible for laying down definite points of junction for lower formations not only in the area of the foremost localities but also in depth. No alteration will be made in these points of junction except by agreement between the formations concerned and with the consent of the commander who originally fixed them.

21. *The battalion in defence*

1. *General* —As a general rule a battalion commander will be allotted the area he is to defend, and informed as to the ground vital to the general defensive plan and the localities, which are to be included in his scheme of defence in order to cover such ground. This may not always, however, be the case, a battalion may have to assume the defensive at short notice. The main principles underlying the action of the battalion commander will be identical in either case, but his detailed action will depend on the time available to reconnoitre and organize his area.

2 The dispositions and arcs of fire of his machine guns will be of primary importance. As in the attack, the method of reconnaissance, and the occupation of positions by machine gun sub units, will be dependent on the time available. the machine gun company commander should, therefore, be told at the outset the time at which his guns are to be in position ready to fire.

Where unlimited time is available it may be possible to arrange a co-ordinated plan of machine gun defence along the front of an infantry brigade from the outset. Normally, however, the brigade commander will be unable, in the first instance, to do more than fix a few of the localities to be held by the forward troops, leaving it to subordinate commanders to arrange the details.

In all cases it is most important that machine guns able to fire in advance of the foremost defended localities shall be given their tasks in time for their commanders to reconnoitre positions, and lay out lines of fire, in daylight. If this

is not done the machine gun defence will be effective only so long as observation of the hostile attack is possible

3 *Orders from superior commander*—The battalion commander should receive all available information regarding the enemy and of the dispositions and movements of friendly troops he must also clearly understand the intention of the superior commander. In addition he will require information on the following points —

- i The sector allotted to his battalion and the line of foremost localities which are to be held
- ii The time by which the position is to be occupied
- iii What artillery covering fire he may expect and the designation of the artillery unit supporting him. It is essential that he should be placed in personal touch with the commander of this unit as early as possible
- iv The scheme of anti tank defence
- v
- vi If his machine guns are to take part in harassing or counter preparation fire
- vii Allotment of tools from brigade resources or assistance from engineer units
- viii The ammunition situation

4 *Preliminary action by battalion commander*—He will arrange for his battalion to move forward to an assembly position in rear of the sector it is to occupy. This position should be screened from hostile air observa-

tion, and arrangements will be made immediately on arrival for its local protection. This task will usually be carried out by strong patrols and by means of observation posts placed on commanding ground.

Before proceeding to reconnoitre, the battalion commander should issue a warning order as to the role allotted to the battalion, the degree of readiness in which it is to be held, the time available for preparing the position, and the time and place at which he will issue his orders. This will permit of the map and possibly also the ground, being studied by all officers prior to detailed orders being given. Meanwhile, the battalion intelligence section will have been carrying out a detailed reconnaissance of the battalion sector with a view to ascertaining the best view points and likely positions for observation posts during the battle.

5 Reconnaissance and plan—Having issued orders for such preliminary action and moves as may be necessary, the battalion commander will proceed to carry out his personal reconnaissance. The officers, who will accompany him, will vary according to circumstances. He will generally take with him his machine-gun company commander, anti-tank platoon commander, and the commander of the artillery supporting him, if he is available, whether he will also take his rifle company commanders and other commanders acting under his orders, or will meet them later, will depend on the time available and the extent to which the sector is likely to be under hostile fire or observation.

He must study the problem from the enemy's I
(140) E

of view in connection with his own proposed dispositions, and bear in mind the following points —

- i The existence of concealed approaches which the enemy may use and what ground it is essential to hold in order to sweep them effectively with fire
- ii Obstacles including natural anti tank obstacles, and tank proof localities which may restrict the enemy's advance
- iii The facilities which the ground offers for counter-attack and any localities vital to the defence, which must be regained if they fall into the enemy's hands

6 As a result of his reconnaissance the battalion commander will be in a position to make his plan of defence. The following points should be considered —

- i What is known of the enemy and of his most probable line of attack
- ii The situation on the flanks and to what extent it will affect the battalion dispositions
- iii The general dispositions of the battalion as between forward troops and battalion reserve. The localities to be held their allotment to companies and inter company boundaries
- iv The fire plan. As regards machine guns this should include distribution and tasks. In the case of the artillery, the detail will depend on the degree of decentralization of artillery command (see paragraph 11 below)
- v The composition and location of his reserve. The probable direction and objectives of any counter attacks likely to be delivered by the

battalion reserve and the fire support to be provided

- vi Anti tank defence
- vii The relative importance to be given to concealment as against cover from fire the preparation of defence works their order of priority and the allotment of tools Any special work to be carried out by engineers
- viii Orders as to ammunition supply and dumping of machine gun ammunition Any restrictions as to fire on counter preparation or defensive fire tasks
- ix Medical arrangements
- x Administrative arrangements *e.g.* great coats food water transport etc
- xi Position of battalion headquarters and the system of inter communication Light signals to be employed

7 The frontage which can be held by a battalion depends on the nature of the country on the enemy on the condition of the troops and on whether the task is to be carried out in daylight or by night. Whenever possible the fire power of machine guns will be used to reduce the calls made on rifle companies in certain natures of country this may enable wide fronts to be held. It must however be remembered that over extension leads to weakness everywhere and to lack of depth the holding of wide fronts will therefore make the observance of the principle of concentration as far as rifle companies are concerned all the more necessary.

By day a proportion of machine guns can be sited to

hold the front, in open country they will often require little assistance beyond that afforded by patrols and a few protective posts to block hidden approaches. By night the situation will be different, machine guns will be laid on fixed lines, but this will be of small value unless warning of the enemy advance is received. It will be necessary by night to patrol widely in order to obtain early information of any forward movement of the enemy. It will also often be necessary to strengthen the forward defences by holding additional localities garrisoned by rifle companies.

The determining factor therefore, will be the frontage which can be held by night, and this should not be exceeded unless it is certain that the position is to be held only by day.

8 A forward battalion will be disposed in defended localities held by platoons or companies. A defended locality includes several section posts so disposed as to

ies must be so
plan that there

will be a continuous belt of small arm fire in front of the position. The ground between the different localities should be covered by small-arm fire, but in darkness or fog it may be impossible to ensure that this fire is properly directed, as troops who are closely engaged have a tendency to fire direct to their front. For these reasons it is advisable to assign important enfilade tasks to machine guns.

9 Battalions in brigade reserve will also be allotted positions from which they will be able to bring fire to bear, should the forward battalions be overrun. These positions must be selected with a view to the employment

for counter-attack of the reserves allotted to them. It will depend on the situation whether such reserves, or a part of them, actually occupy these positions or whether they are kept concentrated and thus better prepared to deliver counter attack (Sec 26)

10 As the first duty of all troops in defence is to stop the enemy by fire, both the battalion headquarters and the reserve of forward battalions will be allotted fire positions which they can occupy if necessary

11 *Artillery co-operation* —The tasks of artillery in defence include harassing fire, counter-preparation, defensive fire (Sec 20, 11) and co operation in counter-attacks together with counter battery work and anti tank defence

Field artillery is allotted to infantry brigade sectors according to tactical needs, where the ground lends itself to machine gun defence, artillery can be economized and made available for portions of the position less favourably situated. The field artillery in each infantry brigade sector when greater than a field brigade, is formed into a group so that in each sector there will be only one artillery commander, each group is allotted a zone for observation and engagement of the enemy, which should, if possible, correspond with the limits of the sector

Light artillery may be held in reserve for the support of counter-attacks. It may also be used for any divisional artillery tasks for which it may be suitable, and possibly for anti tank defence. It should be given early information regarding probable lines of counter-attack, so that suitable positions for the support of such attacks can be reconnoitred.

battalion intelligence section will normally be at battalion headquarters and the intelligence officer will collate the information received from his own section and from company reports

- ii. *Anti tank platoon* —The anti tank platoon commander should accompany the battalion commander on his reconnoissance and be ready to advise as to a suitable distribution of his platoon. His task will be to lend protection to those portions of the battalion which are unable to secure themselves by the use of ground and obstacles against the attack of armoured fighting vehicles. It will usually be necessary to detail certain forward guns for the protection of vulnerable areas occupied by the forward troops, reserve guns will be retained in hand to provide protection in the area of the battalion reserve and battalion headquarters or to act as a mobile reserve

Full use should be made of the mobility of the anti tank guns. Alternative positions should be reconnoitred for forward and reserve guns the guns themselves being kept mobile and under cover, they should be committed to fixed positions only when the ground restricts enemy tanks to definite avenues of approach

- iii. *Battalion headquarters* —The organization of battalion headquarters will be on similar line, to that arranged for attack (Sec 11, 2c)

Concealment will be of special importance and arrangements will be made to ensure that the position of the headquarters is not disclosed to air observation by movement of orderlies etc

- iv *First line transport*—All animals and vehicles not actually required will be sent back to a concealed position in rear of the battalion sector and will be under the direct control of the transport officer
- v *Battalion S A A reserve*—This will be under the regimental serjeant major. It should be sited under cover and as far forward as possible without being beyond the reach of the brigade S A A reserve

15 *Construction of defences*—Infantry is responsible for siting, organizing and constructing its own field defences (Sec 8, 21)

The successful execution of works is dependent upon efficient preparation and organization and upon the security of the working parties. Full details are contained in the Manual of Field Works (All Arms) (See also Chapter VIII)

16 *Conduct of the defensive battle*—The battalion commander will maintain vigilance at all times by

notify the infantry brigade commander so that counter

troops still in position. Generally speaking, it is best to employ fresh troops to occupy positions in rear of disorganized troops, and then to withdraw the latter into reserve. The best way of ejecting an enemy from a captured position is to subject him to such fire from all available weapons as will tend to shake the morale of his troops and then to launch a counter attack.

22 *The machine gun company in defence*

1 *Preliminary action by company commander* — Before accompanying his battalion commander on his reconnaissance the company commander should —

- i Issue warning orders to his company
- ii Give a forward rendezvous to all or part of his company if time would thus be saved
- iii. Give a rendezvous, where he will meet platoon commanders

2 *Reconnaissance and plan* — Whilst reconnoitring the company commander should be prepared to advise as to areas where the ground is particularly suitable or otherwise for machine gun fire, and estimate the number of guns required for each task. He should mark on his map suitable machine gun positions and should, if further reconnaissance be impossible, be prepared to issue orders to his platoon commanders at once on rejoining them.

3 *Issue of orders* — These will include the following —

- i Information of the localities allotted to rifle companies, and the location of their headquarters
- ii Allotment of tasks

attack to retake any important locality. Anticipatory reconnaissance of this nature may have a great influence on the success or failure of a counter-attack.

23 The machine gun platoon and section in defence

1 Platoon commanders reconnaissance and plan —

When warned to be prepared to take up a defensive position a platoon commander will do all he can by a preliminary study of the map and ground to be ready to carry out quickly any task allotted him. Before proceeding on his reconnaissance he should give his platoon sergeant all possible information and a forward rendezvous to which to lead the platoon.

The amount of reconnaissance necessary after receipt of his orders will depend upon the detail in which such orders have been given. The platoon commander will in any case have to select section areas in the area allotted him. These should cover as wide an arc as possible consistent with adequate concealment.

Should his reconnaissance be with a view to the occupation of positions after dark he must be accompanied by a rangefinder and guides and take with him the equipment necessary to lay out fixed lines for each gun.

It is important that platoon and section commanders, when reconnoitring, should take every precaution not to disclose to the enemy the positions selected for their guns.

The plan will be dependent upon the task allotted to the platoon. The considerations affecting tasks are given in detail in the following paragraphs.

action after dark. If allotted tasks for harassing and counter preparation fire the platoon commander should be given adequate time to carry out the necessary reconnaissances in daylight. In addition he should be told whether the movement into the forward area which such tasks may entail can be made in daylight or must be postponed until after dark. Since a platoon allotted counter preparation tasks may find itself involved in an attack at dawn it must be made clear under whose command it will be in such circumstances and what action it is to take.

5 Issue of orders—These will be given verbally if possible within view of the ground to be swept by the fire of the machine guns. They should include —

- i The task of the platoon in the defensive fire plan
- ii The arc of fire of each section and its area
- iii The details of fixed lines
- iv Secondary tasks in order of importance
 - v Where vehicles are to be concealed
 - vi Location of ammunition reserve
 - vii Position of platoon headquarters
- viii Signal for defensive or counter preparation fire and from where it will be sent up

Instructions should be added as to whether guns are to be dug in or reliance placed only on concealment.

6 Command and control—It will rarely be possible for a platoon commander to control his platoon by voice. Normally therefore he must be guided by circumstances as to whether he will make his headquarters near that of the nearest rifle company or select a more forward

2 *Reconnaissance and plan*—The company commander will then proceed to carry out his reconnaissance taking with him his platoon commanders. It should be remembered that the solution to the attack problem will frequently indicate the best fire plan for the defence.

3 Dispositions should be in depth the company being distributed in defended localities held by one or more platoons and a reserve being kept in hand. The depth in which the company locality will be organized will vary according to the frontage and the ground, the distribution being such as to ensure that the flanks of the most forward localities are protected by the fire of those in rear.

A minimum field of fire of 100 to 150 yards is desirable (Sec. 27) a wire obstacle should be erected in front of the company locality as early as possible (See Manual of Field Works (All Arms) 1925 Sec. 37)

The duties of the platoon or platoons in reserve will be to hold up by fire enemy parties which have penetrated the company front or threaten to turn its flanks and also to recapture by counter attack a position lost by a forward platoon. Their positions should be chosen with these duties in view.

The direction in which platoons in company reserve are to counter attack, and their objectives will be clearly defined by the company commander (Sec. 26)

4 *A rifle company in reserve* will usually be distributed by platoons so as to facilitate control by the company commander.

The positions must be organized for fire in case the enemy captures the localities held by the forward companies, the company must also be disposed, as far

as possible, so that it can adopt rapidly the formation required to carry out an immediate counter attack, should a favourable opportunity be presented (Sec 26)

The company commander will keep himself constantly informed by means of observation posts patrols etc regarding the situation on the front of the forward companies so that he may be in a position to anticipate orders and be ready to intervene without delay at the opportune moment (Sec 1, 7)

PATROLS

5 Patrols may be either reconnoitring patrols or fighting patrols

Reconnoitring patrols will be sent out frequently by forward companies during the hours of darkness and always not less than one hour before it begins to get light, also by day if the forces are not in too close contact and the tactical situation permits

Fighting patrols will generally be sent out by order of the battalion commander

6 The strength of a patrol will depend on its task If it is purely for reconnaissance the patrol will avoid contact with the enemy and will strive to gain the information it requires without fighting by day it will be careful to avoid observation and by night it will rely mainly on listening advancing noiselessly and stopping frequently to check direction and to detect movement

The normal strength of a reconnoitring patrol will be a section but it may be composed of only a few selected men

On the other hand a fighting patrol will be larger and may be sent out to accomplish some special task

concentrated as to constitute together a vulnerable target for the enemy's artillery.

- ii. Make such arrangements as are possible to ensure mutual support by fire in conjunction with platoons on his right and left.
- iii. So dispose his sections that in the event of the platoons on his right and left being overrun by the enemy he will be able to maintain his position by all round defence.
- iv. Make the best use of natural cover to obtain concealment and protection from fire. In open country complete concealment will be impossible and in order to mislead the enemy, dummy trenches may be advisable.
- v. Arrange to patrol his defence ground on his front.
- vi. Strengthen the defences as soon as possible by erecting a wire obstacle and by improving the natural cover. Defiles leading into the position (as is bridges etc.) will be blocked at the first opportunity. Fence wire, trees, agricultural implements etc. can be utilized. Even a single trip wire concealed in grass is of value. Care must be taken that any obstacles placed in position are under the fire of the defence and that they are not bullet proof.
- vii. Ensure that he has an adequate supply of ammunition.
- viii. Arrange for sanitation.

2. A defended locality held by a platoon will be organized in accordance with the principles given in Sec 24, 3. A section will be retained in reserve whenever possible.

last man, and will make a final effort with the bayonet sooner than surrender. In no circumstances will it withdraw unless definite orders to do so are received from a superior officer.

5 *The section in defence*—Details regarding the procedure to be adopted and the duties of a section

- Section Leading
- g the post, or if
- s in manœuvring

round the post to take it at a disadvantage, the section commander may be well advised to quit the actual post and take up a position on its flank. By this action he may avoid the total destruction of his section and may, in his turn surprise the enemy

26. *The role and employment of reserves*

1 All reserves in forward infantry brigade areas will be allotted positions, from which they can bring fire to bear when necessary

Reserve sections and platoons will actually occupy these positions. In every case however, alternative positions will be selected to which the section or platoon can move, should the enemy artillery fire threaten to destroy the post or locality, such action will tend to

there is any danger of it being overrun before it could be occupied (Sec 24, 4)

On the other hand, in certain situations when the ground is favourable and good machine gun positions

be delivered with rapidity and be carried through with great resolution ; the opportune moment requires judgment and quick decision on the part of the officer detailed to lead it. The immediate counter attack is carried out —

Firstly, by reserve platoons of forward rifle companies ; they will organize their own fire support for the purpose.

Secondly, by reserve rifle companies of forward battalions. An attack by a rifle company requires considerable organization and, unless unnecessary casualties are to be suffered, adequate fire support must be provided, it may often be advisable to retain a small reserve of machine guns in hand for such purposes. Success in the immediate counter attack depends largely on previous preparation. In all cases objectives must be clearly defined and limited.

5. Provided the provisions of Sec 20, 14 have been carried out, there should normally be no difficulty in providing adequate fire support for immediate counter attacks. All units will do their utmost to assist by fire any counter-attack taking place in their vicinity.

In certain situations, the battalion commander may decide to spend time on reconnaissance and on the organization of an adequate fire plan before launching his reserve in a counter attack. In these cases the operation partakes more of the nature of a *deliberate* counter-attack.

In other cases the battalion reserve may be used to stabilize the situation by fire, in anticipation of a deliberate counter-attack by a reserve battalion to be carried out later under brigade orders.

6 *Deliberate counter-attack* —This will be carried out on the scale required by the situation. Its deliberate nature depends not so much on the size of the force engaged as on the preparations which have to be made in order to secure the co-ordinated action of all arms employed. In certain cases preparations may have to be hurried e.g. when the enemy will gain by delay. In other cases it may be advisable to postpone launching the counter attack until fresh troops and a maximum degree of fire support can be obtained.

If the enemy succeeds in penetrating into the position the first concern of the defence will be to secure the flanks of the breach he has made in order to prevent its extension and to provide a stable base from which counter attack can be delivered with the greatest effect.

The deliberate counter attack will be conducted in accordance with the principles laid down in Chapter II. Objectives will be clearly defined and orders providing for consolidation and limiting exploitation are necessary.

7 All counter attacks whatever may be their nature demand the most detailed preparation of which the circumstances admit in order that they may be launched as a surprise and with the speed necessary to success.

All units in reserve must therefore study carefully any ground over which they may be ordered to counter attack. Should there be time it is an advantage if the contemplated operation can be rehearsed beforehand especially in the case of counter attacks to recapture definite localities.

27. Further considerations in protracted defence

1 The principles which have been referred to in the preceding sections are equally applicable to the case of protracted defence

2 As time passes there will be a gradual elaboration of the temporary defences, obstacles will become continuous, trenches will be connected, and the fire plan will be determined in greater detail

As a result the forward positions can be held with fewer men, which will allow of greater depth, eventually an *outpost position* will be formed and the *main position* will be organized in rear

3 It must be anticipated that the enemy will, sooner or later concentrate powerful forces of artillery, mortars, and other means of destruction. Distribution of the defence in depth is, therefore, of increased importance, firstly, because it tends to conceal the actual dispositions of the defenders and so reduce losses, and, secondly, because the weight of the attack may be such that it will shatter the more forward defences which are exposed to concentrated artillery and mortar fire

4 The fire of all arms will be co-ordinated with a view to breaking the enemy's attack in front of the main position. At the same time a commander must ensure that adequate support is afforded by the other arms to the troops detailed to hold the outpost position

The length of time, for which it is necessary that the outpost position be held, will depend on the plan of the higher commander for fighting the defensive battle

In certain circumstances and on certain specially important portions of the front, it may be advisable to

hold the outpost position in sufficient strength to force the enemy to deliver an organized attack on it. The preparations for such an attack would generally be discernible and the commander of the defence would have the choice of resisting the initial attack in the outpost position, or of withdrawing the troops from it at a suitable time.

But, whatever the distribution of the force, there is only one degree of resistance for the troops whether they are in occupation of the outpost position or of the main position (Sec 19. 7). In the event therefore, of the commander deciding to withdraw the troops in the outpost position clear instructions must be issued to the infantry and the supporting arms as to their action and the methods to be adopted.

5 During protracted defence areas of ground may be occupied by troops for long periods. Particular attention will therefore be paid to sanitation and the care of health.

6 Further details regarding protracted defence are contained in Field Service Regulations, Volume II, 1929, Secs 87 *et seq*.

28 *Reliefs*

1 When ordered to relieve another unit the battalion commander accompanied by his company commanders and such other officers as he considers necessary, will visit in daylight the position to be taken over and will carry out a reconnaissance. Information will be obtained from the unit to be relieved on all points which could assist the task of the incoming battalion, and the details of the relief will be arranged. In protracted opera

the information to be obtained will include the following —

- i. Defence scheme and maps
- ii Information as to the enemy and his habits
snipers machine gun and mortar positions
and the work he is doing
- iii Number of men employed in holding the sector
and their distribution
- iv Normal distribution of machine guns anti tank
guns and light automatics
- v Artillery support and the position of artillery
observation posts and mortar positions
- vi Position of listening posts
- vii Condition of wire and defences generally
- viii Work in hand and proposed
- ix Dug-out and shelter accommodation
- x Intercommunication
- xi Points specially liable to attack and likely
points for carrying out raids in our own or the
enemy's lines
- xii Infantry observation posts
- xiii Communications whether concealed from view
or not
- xiv Areas in the sector under direct observation of
the enemy and danger points where fire is
likely to cause casualties
- xv Light signals for artillery and machine gun
support
- xvi Units on the flanks and the position of their
respective headquarters
- xvii Position of gas alarms and of anti gas defence
stores

- xviii The position of trench and ammunition stores, and the supply arrangements for water, rations, and ammunition
- xix. Sanitation
- xx Position of battalion aid post and of the advanced dressing station
- xxi Location of transport lines
- xxii Mining operations if any
- xxiii. Aeroplane photographs of the enemy positions, if available

2 The machine gun company, anti tank platoon, intelligence section and a proportion of signallers should take over whenever possible, twenty four hours in advance of the remainder of the battalion and during daylight

3 Reliefs will, as a rule, be carried out under cover of darkness. Guides must be provided either by the battalion being relieved or else by the relieving battalion from among the men who have been up in the position since the previous day

4 Strict march discipline must be maintained by all parties moving to and from the position. No lights, smoking or talking will be permitted in view or hearing of the enemy. The pace in front must be very slow and the men must keep well closed up

5 Before beginning a relief every party must receive orders as to what action it will take in the event of a hostile attack taking place while the relief is in progress. Relieving units will also receive orders as to the at which they come under the command of the 'tion or unit in the line

the information to be obtained will include the following —

- i. Defence scheme and maps
- ii Information as to the enemy and his habits, snipers, machine gun and mortar positions and the work he is doing
- iii Number of men employed in holding the sector and their distribution
- iv Normal distribution of machine guns, anti tank guns and light automatics
- v Artillery support and the position of artillery observation posts and mortar positions
- vi Position of listening posts
- vii Condition of wire and defences generally
- viii Work in hand and proposed
- ix Dug out and shelter accommodation
- x Intercommunication
- xi Points specially liable to attack and likely points for carrying out raids in our own or the enemy's lines
- xii Infantry observation posts
- xiii Communications, whether concealed from view or not
- xiv Areas in the sector under direct observation of the enemy and danger points where fire is likely to cause casualties
- xv Light signals for artillery and machine gun support
- xvi Units on the flanks and the position of their respective headquarters
- xvii Position of gas alarms and of anti gas defence stores

CHAPTER IV

PROTECTION

29. *General principles applicable to all forms of protection*

1 A commander who succeeds in surprising his opponent gains a moral superiority which gives him an initial advantage in his operations and helps considerably to counter balance any superior resources which the enemy may possess

2. If an enemy is so closely watched that he can make no movement the nature of which is unknown to his opponent, the chances of his effecting a surprise will be reduced to a minimum. If in addition a commander can prevent information regarding his dispositions and intentions reaching his adversary the latter's chances of operating successfully will be curtailed

3 A force can be regarded as secure from surprise only when protection is furnished in every direction from which attack is possible

A commander therefore interposes protective detachments between his main forces and the enemy (Sec 1, 6)

Methods of protection vary with every situation. All forms of attack which the enemy can deliver must be considered. When the hostile main forces are beyond striking distance protection against the enemy's mobile troops and aircraft is probably all that is necessary, as the opposing forces approach each other, more elaborate arrangements for protection will be required, eventually when the two sides are deployed

CHAPTER IV

PROTECTION

29. General principles applicable to all forms of protection

1. A commander who succeeds in surprising his opponent gains a moral superiority which gives him an initial advantage in his operations and helps considerably to counter balance any superior resources which the enemy may possess

2 If an enemy is so closely watched that he can make no movement the nature of which is unknown to his opponent, the chances of his effecting a surprise will be reduced to a minimum. If, in addition, a commander can prevent information regarding his dispositions and intentions reaching his adversary, the latter's chances of operating successfully will be curtailed

3 A force can be regarded as secure from surprise only when protection is furnished in every direction from which attack is possible

A commander therefore interposes protective detachments between his main forces and the enemy (Sec 1, 6)

Methods of protection vary with every situation. All forms of attack which the enemy can deliver must be considered. When the hostile main forces are beyond striking distance protection against the enemy's mobile troops and aircraft is probably all that is necessary, as the opposing forces approach each other, more elaborate arrangements for protection will be required, eventually when the two sides are deployed

for battle the foremost troops will provide for their own security

The strength composition and disposition of troops detailed for protective duty will therefore depend on the proximity strength and characteristics of the enemy, the size of the force to be protected the dispositions of neighbouring friendly troops the nature of the country and its inhabitants and whether the duty of protection is to be carried out in clear weather or in fog or darkness

A force within striking distance of the enemy's main forces is liable to an attack by infantry supported by other arms, and cannot be considered as secure unless it is able to fight at short notice. It must therefore be so disposed that it can deploy rapidly

4 The duties of all protective detachments are —

- i To secure at the earliest possible moment information of the nature of any hostile movements
- ii To prevent the enemy's reconnoitring troops from obtaining information
- iii To gain time to enable the commander of the force protected to put his plan into execution

No larger force than is necessary for the attainment of these objects should be employed on protective duty

Protective detachments are referred to in the following sections as advanced flank and rear guards and outposts These terms facilitate reference to the duties which fall to the lot of the various detachments but so long as the principles of protection as defined in this section are followed this nomenclature may not be necessary

5 In mobile operations where open flanks will exist, the fact that a body of protective troops is in front must not be taken as affording complete security

Commanders of troops in rear moving or halted will always provide local protection for their commands *which will vary in degree according to the risk of attack*

6 At the end of a movement the troops which have covered the march remain responsible for the protection of the main body unless and until other arrangements are made Similarly when the movement recommences protective detachments will not be withdrawn until the troops detailed for the protection of the movement have assumed this duty

7 The commander of a body of protective troops will keep his command in such readiness for action as the circumstances require His actions must be regulated solely in the interests of the main body he is covering

In the absence of special orders protective troops are responsible for maintaining connection with the force protected

8 The action of infantry in all protective duties is governed by the principles laid down in the chapters dealing with attack and defence Protective detachments are however generally weak in proportion to the frontages on which they may be required to operate consequently depth has to be sacrificed

30 *Advanced guards*

1 The commander of a force advancing towards enemy whether it is acting independently or as a

a larger force, will detail such advanced guards as are necessary for the protection of his columns

2. In order to carry out its tasks of securing information, preventing the enemy from obtaining information, and enabling the main body to continue its march without interruption, an advanced guard has —

- i. To reconnoitre This generally entails offensive action to force the enemy to disclose the strength and position of his main body
- ii. To drive back the enemy's advanced detachments so as to prevent him from obtaining information and delaying the march of the main body
- iii. When opposition which cannot be overcome is encountered to seize and hold the ground necessary to protect the deployment of the main body and to provide the observation necessary for the preparation and execution of further operations (Sec 9, 5)

Reconnaissance to locate the enemy's flanks will be of special importance

3 The strength and composition of an advanced guard will depend on the intentions of the commander of the force, and on the factors referred to in Sec 29, 3. As it has to reconnoitre and fight, it will usually be composed of all arms, tanks may be included in it if the commander of the force considers it essential to overcome opposition quickly or if there is a likelihood of the advanced guard encountering hostile tanks. The advanced guard will normally be divided into advanced guard mounted troops, vanguard, and main guard. Aircraft and armoured cars will usually be used for more distant reconnaissance

ADVANCED GUARD MOUNTED TROOPS

4 A commander may decide either to retain his mounted troops under his own orders or to sub allot them to advanced guard commanders. In any case a small body of cavalry allotted to the advanced guard will expedite the advance and save the infantry fatigue. In these paragraphs the latter case is considered where the bulk of the available cavalry is acting under the orders of the advanced guard commander and is termed advanced guard mounted troops.

5 The advanced guard mounted troops will usually be employed —

- i To cover the advance of the column by reconnaissance to give early warning of the presence of the enemy by driving away minor opposition and by opposing so far as they are able any advance on the part of the enemy.
If unable to overcome opposition they will endeavour to discover its nature and especially the extent of the front held by the enemy.
- ii To seize and hold important tactical features until the arrival of the infantry.
- iii To carry out a special mission of a limited extent, such as a special reconnaissance.

Any advanced guard mounted troops which are employed on the two last named tasks cannot be held responsible for the protection of the column altho the nature of the task allotted in varying degree gives some such protection.

Advanced guard mounted troops will when covering a column advance by bounds and when tactical features exist these bounds should as far as possible be from tactical feature to tactical feature. In flat featureless country the bounds may, however, have to be regulated by time or distance.

The commander of the advanced guard mounted troops is responsible for endeavouring to obtain for the advanced guard commander such information as the latter may require within the area in which the cavalry is operating. When necessary and practicable the times at which reports are to be delivered to the advanced guard commander should be stated.

VANGUARD

6 The advanced guard commander will detail a suitable vanguard or forward body the duties of which will be to afford protection to the main guard and to assist the advanced guard mounted troops in obtaining information by supporting them against opposition which they are unable to overcome. In deciding on his dispositions the commander will have regard to the route, the order of march, the nature of the ground, the position of the main guard, the position of the artillery, the position of the engineer and the position of the close reconnaissance.

The advanced guard commander will arrange artillery support for the vanguard if necessary. In this case the artillery commander will accompany the vanguard commander. Artillery and engineer reconnaissance parties will accompany the vanguard.

7 The vanguard will move in sufficient depth to ensure its own local protection. Vanguard headquarters will normally move at the head of the main body of the vanguard. Only such transport as is required for fighting will accompany the vanguard. The remainder of the first line transport will move in rear of the main guard under orders to be issued by the advanced guard commander.

8 When there is no cavalry working with the column the vanguard will be responsible that sufficient reconnaissance is carried out to ensure protection to the main guard. As this duty can be performed only by rifle companies the rate of forward movement will be slower. In open country and when no opposition is anticipated a small proportion only of the vanguard infantry should be deployed for reconnaissance and a strong central reserve retained in hand.

In close country on the contrary it will be necessary to deploy a larger proportion of the vanguard infantry with the strength greater on the flanks and the central reserve smaller. The reserve should be so situated that the centre of the front of advance which will be relatively weak can be strengthened rapidly when necessary.

In no circumstances should protection and reconnaissance on a flank under these conditions be entrusted to less than a rifle platoon.

9 In the case of a battalion acting as an advanced guard to an infantry brigade some machine guns may be placed in support of or under the command of the vanguard. When placed under the command of vanguard commander they will revert to their company control when the deployment of the rem

in the hands of the advanced guard commander, available for employment according to the situation and the information procured by the forward troops. Advanced guard headquarters will usually move at the head of the main guard.

The advanced guard commander himself should be well forward, so as to keep in touch with the situation and be able to carry out reconnaissance well in advance, he will be accompanied by such officers as he considers are necessary to enable the main guard to be deployed rapidly for action.

ADVANCED GUARD COMMANDER

12 The advanced guard commander, before taking over his duties will be told —

- i What is known of the enemy
- ii The strength and composition of the advanced guard
- iii The intentions of the commander of the force he is to cover including directions as to the objectives to be gained during the advance
- iv The hour at which the main body will start the route or routes it will follow and the probable duration of the march
- v The orders given to the mobile troops operating ahead of him and to other bodies of troops on his flanks

ACTION OF ADVANCED GUARD

13 Subject to any orders that may have been —
by the commander of the force the advanced

action of the main body, such are important topographical features, favourable observation posts and view points, villages which block the roads on the line of advance, or woods which provide cover for deployment. As in any other attack, it is essential to allot sufficient fire resources to make success reasonably certain. The artillery will move by bounds so that a portion of it is always available to support the infantry when required. The penetration of covering positions may often be difficult owing to the power of machine guns and other automatic weapons, to ensure an adequate fire superiority it may sometimes be necessary to employ all the available artillery against an objective on one part of the front and then to switch it against another.

The essence of success lies in rapid and resolute action.

Reconnaissance on the part of the leading troops will be important in order to find out the enemy's dispositions, and also those of neighbouring friendly troops. Similarly, units in reserve should be constantly engaged in discovering the dispositions of troops to their front and the best lines of advance.

16. *Advanced guard to a retreating force* — It is usually advisable to have a small advanced guard to a retreating force. It will be responsible for clearing away obstacles which would delay the march, and for improving where necessary and marking the routes to be followed by the main body, a party of engineers will therefore be included.

It will observe all precautions against surprise. It may be required to drive off attacks by armoured fighting vehicles or mobile troops which are endeavouring

body during the day's march. A flank guard so placed can command a large area, and can attack in flank or neutralize an enemy attempting to engage the main body from a flank, it will be important to watch the routes by which an enemy can approach.

To determine how long a covering position of this

in order that the rear of the main body can be protected. In any case an area of responsibility will be assigned to the flank guard commander.

4 In the case of movements of smaller forces a flank guard may often best carry out its duty if it moves parallel to the force to be protected.

The mobile troops will move by bounds being directed on to a series of important tactical localities from which a good view over the surrounding country can be obtained, special reconnaissances should be sent to search areas where the enemy might assemble unseen from the air.

So long as there is no immediate danger of attack, the remainder of the flank guard will move along the road allotted to it in column of route covered by its own advanced guard and, if necessary, by a rear guard. The flank guard commander should retain a small portion of the mounted troops for close reconnaissance duties on the front and flank of his column, and so spare the infantry, some mounted orderlies may also be required for intercommunication. Frequent information as to the progress of the main body is essential.

If there is a probability of attack, the flank guard

effect this, a commander detaches such rear guards as are necessary for the protection of his columns.

2. The circumstances which compel a commander to withdraw are —

1. When he wishes to avoid or to postpone a decision by battle

a After an unsuccessful action

In the first case, provided the withdrawal is begun before the opposing forces come into close contact, a serious collision will be unlikely. Should the withdrawal be delayed, however, it may then be necessary for the whole rear guard to occupy selected positions for a period sufficient to enable the march of the main body to be carried out unimpeded by the enemy.

In the second case it will generally be advisable to postpone breaking off the battle until nightfall, so as to gain sufficient time to enable the main forces to make good their withdrawal.

3 The strength and composition of a rear guard depends on such circumstances as the closeness of the pursuit, the length of time it is necessary to delay the enemy, whether the ground lends itself to delaying action, and other factors.

In no circumstances should a greater force be employed than is necessary for the task in hand.

Information of the hostile movements will be the first requirement, this will be obtained by aircraft and mobile troops.

The second requirement is the development of the greatest possible fire power at long ranges with the least expenditure of personnel, for this purpose a rear

— and machine guns
 fully
 ntry
 over
 re be
 tanks
 accompanied by as little transport as possible
 may be invaluable

4 A rear guard will normally be divided into rear guard mounted troops rear party and main guard Aircraft will usually co operate directly with it.

The rear guard commander will be told the probable rate of movement of the main body and what demolitions are being prepared to impede the enemy's advance He should also be informed periodically as to the progress of the main body and will himself send in constant reports on the tactical situation to its commander

WHEN THE PURSUIT IS NOT CLOSE

5 When the hostile pursuit is not close the chief responsibility for delaying the enemy will devolve on aircraft mobile troops and the artillery Offensive action from the air long range artillery fire and demolitions all exercise a great delaying power on a pursuing force

A portion of the artillery will when necessary take up successive positions to delay the enemy by long range fire covered by the mounted troops Mechanized field artillery and when available horse artillery are particularly suitable for this work by reason of their mobility Medium artillery may be invaluable for delaying the enemy and forcing him to deploy it should

retire by long bounds so that its periods out of action may be as short as possible.

All roads by which the enemy can advance must be watched by aircraft, armoured cars and mounted troops the latter should especially watch the flanks and in the case of parallel columns the gaps between respective rear guards. The less mobile troops will form the main guard with a small rear party for local protection to collect stragglers and to ensure that the main guard has time to deploy. The main guard will normally move along the road in column of route in the order which will enable it to come into action most readily. The unnecessary deployment of infantry is to be avoided at this stage. If more than one road is used by the main guard each portion will find its own rear party. The remainder of the rear guard artillery will be allotted positions in the column so that it is suitably placed to support the rear guard should the latter have to deploy.

6 Should the enemy press the rear guard mounted troops so seriously that the latter are unable to delay his advance it may be necessary to employ the rear guard as a whole. This possibility must be foreseen in good time so that positions can be reconnoitred in advance by officers of all arms. The principal duty of the rear guard mounted troops will then be to protect the flanks by wide and persistent reconnaissance.

WHEN IN CLOSE CONTACT WITH THE ENEMY

7 When in close contact with the enemy rear guard actions may be considered under two headings —

- i Those carried out on a timed programme
- ii Those carried out in conditions when so lo

is responsible, the length of time which he has to deny the position to the enemy, and other factors

In occupying rear guard positions it is important to hold strongly those localities, which command the main lines of approach, and to ensure that the various localities held can mutually support each other by fire. The positions selected should be those, from which it is easy to withdraw unobserved from the ground and air, which afford concealment, and from which long range fire can be developed. Full advantage will be taken of natural anti tank obstacles. Every thing possible should be done to force the enemy to deploy early, to make his reconnoissance slow and difficult and above all to confront him with fire from an unexpected direction should he attempt to attack without careful preparation.

10 So far as infantry units are concerned the principles governing the occupation of the localities allotted to them will conform generally to those laid down for defence (Chapter III). An extensive use of machine guns will lend strength to the position.

Concealment will be of the utmost importance. The possibility of the enemy making a bold use of tanks must be borne in mind and the defensive localities selected should be chosen as far as possible with a view to minimizing this danger.

Machine guns should be sited in direct fire positions covering as wide an arc as long a range as possible. The alternative positions being selected an easy and concealed line of withdrawal will be important and vehicles should be kept as near the gun positions as

11/11/11

fight must be avoided at all costs as it leads to loss of control.

Once troops have left one position they will go straight back to the next one as quickly as they can, the operation of disengagement when closely pressed may, however, necessitate the occupation of certain intermediate localities close behind the position from which withdrawal is taking place

Surprise by withholding fire until a favourable target is presented and ambushes will often enable troops in immediate contact with the enemy to be disengaged without further interference

13 It will be important to co-ordinate the withdrawal along the front otherwise gaps will develop in the defence through which the enemy may penetrate and so outflank and cut off portions of the rear guard

To effect this and to ensure control the front for which the rear guard is responsible should be divided into sectors the commander of each sector will be responsible for providing his own rear party The withdrawal of the rear parties along the front will be co-ordinated by the rear guard commander this will be best effected by laying down the time at which the forward line of defended localities will be finally abandoned or by indicating a co-ordinating line behind the forward line of defended localities which the various rear parties are to cross at a given time The artillery will then know the situation and can apply fire accordingly In addition it will often be advisable to lay down the time the withdrawal of the rear guard troops may begin this time may vary on different portions of the front

It is important that the enemy should remain in

commander so that it can be withdrawn easily to occupy the next position in good time or be available to support a counter attack. Dispositions should be in depth with a view to bringing long range fire to bear on the enemy, thus forcing him to deploy early and frequently to providing adequate covering fire close in front of the forward infantry localities and to reducing the danger of successful attack by hostile armoured fighting vehicles.

In withdrawing the artillery care must be taken that fire is always available to cover the rearmost troops to ensure this continuous support batteries and sections will be leap-frogged back in turn.

Early information of all moves should be given to the artillery to enable detailed arrangements to be made for withdrawal and for the occupation of new positions.

It will be important to get some artillery established on the next position in good time.

16 Counter attack — It is inadvisable to use reserves to reinforce disorganized or exhausted troops who are retiring under pressure from the enemy. In these circumstances it is better to use the available reserves to stop the enemy by fire from a position in rear or to launch a counter attack. A counter attack may be required in order to —

- i Disengage the whole or a portion of the rear guard which has become seriously committed should it be decided to extricate it in daylight
- ii Re establish the situation at a place where the enemy has broken through
- iii Impose caution on the enemy and increase the morale of our troops

The objective selected for the operation will be strict

18 *Rear guard to a force advancing*—If there is a possibility of the rear of an advancing column being exposed to attack, a rear guard of all arms sufficiently strong to meet all emergencies, will be detailed.

If the main body and the transport march without any considerable distance between them one rear guard will suffice for the whole, if, on the other hand, there is a large interval the rear guard will follow the main body and the transport will be allotted a special escort.

Should the role of the rear guard be only to collect stragglers and keep off marauders, it will usually be composed of infantry with a small detachment of cavalry to watch the flanks.

33 *Protection at rest*

1 *General considerations*—Protection will be organized to meet any form of attack which can be delivered by the enemy, there will normally be three contingencies to be considered—

- i When beyond striking distance of the enemy's main forces
- ii When within striking distance of the enemy's main forces
- iii When in close contact with the enemy, i.e. protection during battle

When opposed to an irregular or savage enemy it must be assumed that he is at all times within striking distance, and protective measures are imposed accordingly.

2 Whatever may be the situation, security when at rest will be provided for only by an efficient system of obtaining information, and by the correct disposal of

troops in depth in order that adequate resistance may be offered to any form of attack the enemy can make (Sec 29 3)

Information will be obtained by aircraft and mobile troops and by patrolling and observation on the part of infantry and artillery whenever the situation permits other sources of information will be prisoners agents inhabitants etc (Sec 1, 6)

In addition security is provided for by protective detachments disposed between the enemy and the force concerned these detachments are drawn from the troops to be protected and are termed outposts The object of outposts is to enable the bulk of the force to rest to prevent the enemy from obtaining information and in the event of attack by giving warning and offering resistance to gain at all costs sufficient time for the commander of the force to put his plan into execution

To perform this task the two essentials are (a) information and (b) the power to resist

3 Every body of the enemy within striking distance should be so closely watched that it can make no movement the nature of which does not immediately become known to the outposts The latter will therefore —

- i Keep a close watch on all bodies of the enemy within reach
- ii Watch all approaches along which the enemy might advance
- iii Examine all neighbouring localities in which the enemy might conceal his patrols or which he might occupy preparatory to an attack

Outposts will therefore constantly carry out recon

reconnaissance, battalion intelligence personnel may be usefully employed for the more distant observation.

In rear of the outposts the rest of the force is so disposed that the commander may retain his liberty of action and be able to adapt his dispositions to the situation as it develops.

BEYOND STRIKING DISTANCE OF THE ENEMY'S MAIN FORCES

4 A force beyond striking distance of the enemy's main forces is unlikely to be subjected to a co-ordinated attack by infantry supported by other arms since to attack without reconnaissance is a hazardous operation. A force in such a situation will however be liable to raids by armoured cars and tanks by troops brought up in mechanical transport under cover of darkness and possibly by wholly mechanized formations. Adequate measures for protection will therefore be taken.

5 The normal procedure will be to block all roads or other avenues of approach leading from any direction into the area in which the force is halted. anti tank defence will be provided for by the co-ordination of infantry anti tank weapons and artillery and by tank obstacles.

Battalions will filet or bivouac in depth with detachments pushed out to block the roads and approaches. the strength of these detachments will vary with the situation but they shall be kept as low as possible in order that the greatest number of troops may be kept under cover and rested.

It must be clearly understood by these detachments that they constitute the outposts or troops whose task

is the protection of the remainder of the force. In case of attack, their action will be as in defence. Fire positions will be prepared for each detachment and barricades placed on all roads and approaches leading into the area. Any obstacles erected should be of a type which can be easily removed when the march is resumed, and will be so placed that they are under the close fire of the defence.

6 By day machine guns can be used to cover gaps between detachments guarding the main approaches. By night they may be used, either singly or by sections, to provide concentrated fire on any well defined target such as a bridge, or on lines of advance which might be used by the enemy. Special arrangements will be necessary for their local protection when used singly.

7 Every battalion must be clear as to its action should an attack take place. The location and action of the protective detachments will be co-ordinated by the out-post commander of the area concerned, who will usually be the infantry brigade commander. Reserve sub-units will have definite alarm posts and be so disposed that the forward detachments can be supported at short notice if necessary.

Infantry and other units in reserve will also have alarm posts, and will be located so that they can hold up an enemy penetration or be used for counter-attack.

8 Defensive measures will be equally important for troops in rear, and they will be allotted areas in which they will be responsible not only for their own protection but also for that of the services of supply and maintenance. Co-ordination of these measures will be as necessary as in other areas. Blocks constructed on roads in rear

should be so erected that traffic can pass through them at a slow pace

9 The system of protection described above will provide defence in depth on an area basis in the event of attack. Should the force remain halted for a day or more, the service of obtaining information will proceed in the same way as if it was advancing. In addition to aircraft and armoured cars mounted troops will be used to carry out the duties of reconnaissance by day at a distance.

WITHIN STRIKING DISTANCE OF THE ENEMY'S MAIN FORCES

10 A force halted within striking distance of the enemy's main forces is liable to an attack by infantry supported by artillery and other arms. It must therefore be dealt with as follows:

to be occupied by the main body, if the enemy attacks, and the general line to be held by the outposts. The outpost position must cover any ground essential to carry out his plan of battle, and the troops in it constitute the outposts.

In rear of the outposts the remainder of the force though deployed for defence will be kept in hand as far as is possible in order that the commander can adapt his dispositions to the situation as it develops.

Unless the two forces are actually in contact, the enemy cannot expect to launch a major attack with reasonable prospects of success until he has had time to carry out

reconnaissances and to perfect his arrangements. It must be realized however, that when a force is halted for more than 24 hours within striking distance of an enemy, the danger of attack will increase as the enemy will have opportunities of procuring information and of making his offensive arrangements.

11 *The action of the outposts troops* will be as in defence (Chapter III)

Positions will be selected with due regard to the ground and mutual support, and the fire plan will be carefully organized. Anti tank defence will now be of increased importance.

Unless the enemy has had opportunity for detailed reconnaissance, any attack by night is likely to be along clearly marked features such as roads, tracks, railways, etc., and in open country along the bottom of valleys or tops of ridges. Such lines of approach must, therefore, be strongly held by night; machine-gun fire being of particular importance (Paragraph 6, above).

In addition, patrols will be pushed forward both by day and night to guard against surprise. Their role must be clearly defined (Secs 20, 6 and 24, 7).

Both forward and reserve positions will be protected by obstacles, and light signals or other means provided for giving the alarm.

12. Whether the two forces are in actual contact or not, the struggle for information must proceed without interruption. The closer the two forces approach each other, the more will this duty devolve on the infantry. By means of reconnoitring, and, if necessary, fighting patrols (Sec. 24, 5), the infantry will examine all the

localities where the enemy could conceal his patrols or mass for an attack

Active patrolling is the best means of protection for a force in such a situation. Localities too distant for infantry patrols to reach will be examined by mobile troops by day

PROTECTION DURING BATTLE

13 When two forces finally come into close contact, each will be deployed on its battle frontage and will be maintained in a state of complete readiness for action. Forward infantry units will protect themselves by means of sentries and patrols

It may often occur in these circumstances that no orders can be issued by superior authority as to measures of protection. The commanders of advanced troops are responsible for taking the necessary steps for securing themselves against surprise for keeping in touch with the enemy and for informing their superiors as to the situation

DUTIES OF THE COMMANDER OF A PROTECTIVE DETACHMENT

14 As soon as the commander of a protective detachment has received his orders he will move his detachment, by a covered approach if possible to a place in rear of the locality for which he is responsible, and will send out patrols to guard against surprise

He will examine the ground and decide on the number of sentries he will require remembering that no more should be used than are absolutely necessary. By night and in foggy weather double sentries will be

(Sec 25, 3) any required for night dispositions only will not be posted till after dusk care being taken that there is no danger of their being cut off and that they do not mask the fire of the detachment

15 He will then explain his orders to the men and will detail the various duties and their reliefs including one or more sentries over the detachment for the purpose of warning it in case of attack In order to prevent the men being disturbed unnecessarily by night he should arrange that the N C Os and men of each relief of the various duties bivouac together and apart from the other reliefs All reliefs should know exactly where to find the men of the next relief

He will ensure that every man knows the direction of the enemy the position of other protective detachments in the vicinity and what he is to do in case of attack by day or by night Having posted his sentry groups he will ensure that their commanders and the

alert and know their duties

16 He will see that each man understands that it is his duty to hold his ground to the end The post or locality will be strengthened, fire positions reconnoitred, and communications improved where necessary An obstacle even if it is only a single trip wire, should be placed out in front, and, in the case of roads, barricades will be erected

Accommodation for the men must be considered and sanitary arrangements made He will maintain com-

munication with the troops on either flank, arranging with them for mutual fire support where possible.

17. Protective detachments will invariably be ready for action. They will hold their ground in case of attack as resolutely as in any other defensive position. By day not more than one or two men should be allowed to leave the detachment at any one time. By night all men other than patrols will be with the detachment, equipment will not be removed, and not less than *one-third of each detachment will be awake and manning its fire positions.* All protective detachments comprising the outposts will stand to arms and send out patrols one hour before it begins to get light, and will remain under arms until the patrols report there is no sign of an attack.

Although a high degree of readiness for action is essential, the importance of making adequate arrangements for the comfort and welfare of the troops must always be borne in mind.

TRAFFIC THROUGH THE OUTPOSTS

18. No one other than troops on duty, prisoners, deserters from the enemy and flags of truce will be allowed to pass through the outposts either from within or without, except with the authority of the commander who details the outposts.

Inhabitants with information will be blindfolded and detained at the nearest post pending instructions, and their information sent to the outpost commander. Where there are large numbers of refugees it will be impossible to prevent them crossing the line of outposts.

special arrangements will be necessary for their collection and subsequent disposal

19 No one is allowed to enter into conversation with persons presenting themselves at any post except the commander of the post concerned who should confine his conversation to what is essential Prisoners and deserters will be sent at once under escort to the authority appointed to interrogate them

34 Protection from aircraft

1 It is the duty of every commander to make the necessary arrangements for the protection of his command from attack by aircraft with all the means at his disposal

2 High bombing attacks are dealt with by anti aircraft artillery and by air action

3 Low bombing attacks or attacks by single seater fighters may take place In such cases enemy aircraft may attack in rapid succession diving on to their objective and employing either machine gun fire or bombs Such attacks against demoralized troops may have a decisive effect but if met with controlled small arm fire the cost of this form of attack would be prohibitive

The essential in dealing with low flying attacks is rapidity in engaging the attacker therefore the earliest possible warning of the approach of an attack is of the utmost importance

4 Enemy aeroplanes are often forced to fly low in searching for information Small arm fire is of great value if used offensively to prevent them achieving their object

5 *General principles of small arm defence*—Troops will defend themselves against low flying attacks by small arm fire, to be effective such fire should be controlled.

Rifle fire is effective up to about 2 000 feet. Light automatic fire and when suitably mounted, machine guns may be used with effect up to 3 000 feet.

In addition it may be possible on occasions to avoid such attacks by concealment while suitable formations will help to minimize casualties.

6 The efficiency of the defence will depend firstly, on the speed at which warning of attack can be conveyed to subordinate commanders; secondly, upon the quickness with which the warning can be followed by executive orders for movement or fire; and lastly, on the skill and fire discipline of the troops themselves. Since there will be no time to issue orders for opening fire through the normal chain of command responsibility must be delegated. It must be made clear to the fire unit commander whether he is to open fire on his own initiative or not.

It should be impressed on troops that although small arm fire may often appear to be ineffective the invisible damage caused to struts, rigging etc., may put aircraft out of action for considerable periods.

7 When on the move or deployed the rifle will be the normal weapon. The few rounds that can be fired in time, the difficulty of hitting the target and the smallness of its vital parts all make it advisable that as great a volume of fire should be employed as possible. Normally, therefore, all available rifles will fire. Transport will clear the road if possible.

8 When it is important that movement should not be checked, the commander of a formation or unit may order that only certain units or sub-units are to fire, or previous arrangements may be made to piquet the route. In such cases the remainder will continue the march opening out or adopting such open formations as the nature of the country will allow.

9 When halted, light automatic fire is the most economical form of protection. If the attack is prolonged or made in strength, light automatic fire may be reinforced by rifle fire.

10 When troops are concealed, definite orders will be issued as to whether anti aircraft light automatics are to be posted and fire opened on hostile aircraft or not.

11 *Anti aircraft precautions*—In view of the effect on the lengths of columns, it may be inadvisable to increase distances between sub units on the march. But in passing a dangerous defile when hostile aircraft are active, the risk of air casualties may outweigh the above objections.

12 When faced with the passage of a defile, or when

responsible for the general plan of defence, the posting of piquets in advance of the column, and for their collection afterwards.

13 In addition to such measures against enemy aircraft as may be taken by a formation commander,

every unit commander will be responsible for his own local protective measures. These will include —

- i. The provision of air sentries
- ii. Instructions to rifle-fire units. Such units should march with magazines charged sights set at 600 yards and one charger in pocket for use if attacked when equipment has been removed
- iii. Instructions to anti aircraft light automatic sections. Weapons will be either mounted on vehicles ready to open fire or carried ready to bring into action
- iv. Instructions as to the formation to be adopted either in anticipation of or on the occasion of, aircraft attack

It will be important to offer the least favourable target. In close country quick deployment off the road may be impossible. In such cases orders to troops to march on both sides of the road may assist concealment and make it difficult for hostile aircraft to locate the column. The free passage of traffic however must not be hindered.

14 So far as practicable the fire of anti aircraft light automatics and rifles will be co ordinated by allotting definite zones or directions in which weapons are to fire.

15 *Warning signals* — Two signals only will be used —

- i. *Enemy aircraft in sight* — As for the alarm viz long and short blasts on the whistle. A visual signal will also be used to attract attention viz both arms held above the head and hands waved. On this signal troops will either get ready to fire open out or take cover, according to the orders in force
- ii. *Attack over* — Two long blasts repeated at intervals of one second. On this signal all

troops resume previous formations Men who have fired rifles will recharge their magazines before moving off

16 *Concealment from the air* — A knowledge of the principles of concealment from the air will assist officers not only to protect their commands from attack or detection by aircraft but also to report on localities which offer the best means of affording such concealment

Shadows form an effective means of concealment The value of woods for this purpose cannot be decided from a map as they vary considerably according to the nature of the trees and the time of the year, air photographs will be of value in deciding whether a wood is

..

from looking upward when aircraft are overhead they are difficult to observe even in the open Tracks are easily seen from the air they should therefore be continued past the position to which they lead and should follow inconspicuous routes whenever possible Visibility from the air depends largely on atmospheric conditions but the following table may be taken as a rough guide regarding the detail which can be seen from various heights in fair weather —

At 500 ft troops can be recognized as hostile or friendly

At 1 000 ft concentrations in trenches can be seen

At 1 500 ft movements of small parties in the open can be observed

At 5 000 ft movements of formed bodies on a road are visible

in close country Much will depend on clear initial orders and on the initiative displayed by junior leaders

4 Woods and villages form extreme types of close

also movement inside woods and the exact positions of the defensive works are difficult to see from the air or to detect on an aeroplane photograph

Small woods and villages offer favourable targets for concentrated artillery bombardments If it appears likely that they will be heavily shelled or gassed the casualties incurred in fighting for them will probably be out of all proportion to their tactical value

5 *Offensive operations* —The attack in close country is based on the same principles and tactical considerations as any other attack The following characteristics are however peculiar to such an attack —

- i More cover can be obtained
- ii Greater opportunities for manoeuvre and infiltration are offered and it is possible to surprise the defence as to the direction and weight of the attack
- iii It is difficult to maintain direction and cohesion and control are liable to break down
- iv The power of the other arms in support of the infantry advance can rarely be fully developed

6 To operate successfully, troops must be highly trained and resolutely led

Objectives should be lines (roads, tracks, streams, clearing, etc) which can be easily recognized on the ground, and along which touch can, as necessary, be re-established. The distance between them should not be too great and the character of terrain counted on

to maintain direction will be imperative, and every opportunity must be taken to reorganize both for the purpose of regaining control and for checking the direction of the advance.

In certain circumstances, artillery may be able to assist infantry in maintaining direction by the use of smoke shell (Sec 8, 11).

7. When moving in file along covered approaches such as hedges or ditches infantry must take steps to avoid being caught unawares by enfilade fire at short ranges. Much depends on the way in which local protection is organized. In any case infantry may suddenly come under a heavy surprise fire at any moment, and must be prepared for this eventuality, a forward rush will often be the best reply to such enemy action.

8. It will be important to make adequate arrangements to ensure touch being maintained with units on the flanks. This may be done by observers or patrols meeting at previously selected places and by halting and gaining touch on roads which run at right angles to the line of advance.

9. *Defensive operations* — The defence in close country is based on the principles laid down in Chapter III.

By employing troops in covering positions the defence may be able to force the attackers to deploy prematurely such deployment will be hampered by the conditions of the ground whilst the withdrawal of the covering troops can often be carried out unobserved

It will be difficult to find positions which afford full scope for the use of weapons consequently the fronts allotted to rifle companies should be less than in more open country Work on clearing the foreground will be essential where the cover is thick and the time for preparation short it may be possible only to clear lanes to be swept by the fire of automatic weapons Material cut down may often suitably be used as obstacles Communication routes must be improved and if necessary marked in order to facilitate the movement of reserves

10 The immediate counter attack will be a vital factor A successful local penetration may soon become dangerous to the defence owing to the difficulty of locating the limits of the hostile gains and of checking by artillery fire the movements of enemy reinforcements

36 *The attack in woods*

1 When attacking woods it is difficult to ascertain the exact positions which are being held good co operation between the artillery and infantry is therefore not easy to achieve It is best to outflank and surround woods and then to proceed to clear them of the enemy If they are too big to enable this to be done successive objectives should be fixed and the attack carried out methodically on each objective in turn

2 The first objective is the edge of the wood Salients

are useful to the defence for delivery of flanking fire and are often strongly held and protected by obstacles. It is generally advisable to subject them to heavy bombardment and to attack the intermediate portions which are usually less strongly garrisoned.

Once the outskirts are reached steps will be taken to get the troops in hand so that the advance can be resumed without delay. Patrols should be sent forward at the same time to reconnoitre the wood and to maintain touch with the retreating enemy.

3 An advance through a wood should be made methodically compass bearings being taken frequently. Extensions intervals and distances will depend on visibility. The leading rifle companies should protect their fronts by means of sections extended in line followed by section or platoon columns. In very thick woods connecting files may be necessary. The battalion reserve should move in a column formation. Frequent halts will be necessary for the purpose of control and to re-establish touch.

4 *Rides* and *clearings* running parallel to the line of advance should be avoided by the forward troops who should move through the wood just clear of them.

Transverse and diagonal rides commanded by the enemy should be crossed at a single rush.

5 Detachments of engineers should accompany infantry in order to assist in clearing and in the repair and marking of roads and tracks.

6 *Artillery support* usually takes the form of a concentrated bombardment prior to the infantry assault, to assist it to capture the edge of the wood. When close

on each side of them may again touch at the far end by extending inwards, the capture and clearing of the wood should be the task of a complete unit and will usually form a separate operation, for which the best method is often to attack the enemy defences from the rear.

9 The enemy will probably subject the edge of the wood to heavy fire as soon as he knows that his own troops have been driven from it. It will therefore be advisable to reorganize forward rifle companies before the extreme edge of the wood is cleared, so that they may debouch into the open on the heels of the retreating enemy and get well clear of it before the bombardment opens.

10 The attack on a small wood should be made from a flank if possible. The exits should be commanded from the flanks by automatic weapons. This will assist in stopping the arrival of reinforcements and in cutting off the retreat of the defenders.

11 In the advance through extensive belts of wooded country both land and air reconnaissance are difficult, and there may be the possibility of a surprise attack in flank being delivered by mobile troops, including armoured cars or tanks. If such a danger is anticipated, it is advisable to put small flank guard detachments, which should include anti tank guns to protect the avenues by which such attacks can be made. These detachments should remain in position during the passage of the column and its transport withdrawing to join the rear guard as soon as their respective missions are completed.

37. *The defence in woods*

1 When woods fit into the general scheme of defence they should be held as they afford valuable obstacles to break up the enemy's attack provide natural cover for the defence and give protection against tanks. On the other hand if the enemy is likely to employ heavy concentrations of persistent gas they may be rendered untenable by either side for days.

2 A wood which is too far in front of the position to be a serious threat to the defence should not be held, but steps taken to arrange the defences so that effective fire can be brought to bear on the exits. Patrols should be sent into the wood and if time permits entanglements and obstacles prepared both inside the wood and on its near edge.

3 The defence of small copses in close country can often be effected by entangling them and commanding them from positions in rear. By this means the copses can be used to break up the enemy's attack.

4 The general system of the organization of a wood for defence normally includes —

- i The holding of positions either in advance of the forward edge or just inside
- ii Further positions in the interior of the wood, and
- iii Defences in its rear to guard the exits

5 The front edge of a wood will probably be subjected to a heavy and accurate artillery bombardment. It is therefore usually advisable to hold it lightly with machine guns or other automatic weapons.

The outskirts of the wood should be entangled when-

ever time permits, and the obstacles covered by flanking fire

6 Inside the wood, the principal rides and clearings which the enemy will have to cross in his advance should be commanded by fire. . . .

from which to command rides and clearings, but if they are situated in wide clearings where they may be subjected to concentrated artillery fire alternative positions should be selected, to which the garrisons can move if necessary

Anti-tank weapons will be sited to command the principal rides and clearings which run parallel to the line of the enemy's advance

7 If the enemy succeeds in capturing the wood, every effort must be made to prevent him exploiting his success. With this object in view defences will be organized in rear so that if the enemy attempts to debouch he will be engaged with fire

38. The attack on villages

1 A town or village should form a distinct objective, for the capture of which a definite formation or unit should be allotted

2 Fighting amongst houses and clearing cellars is slow and exhausting work. The delay which may be entailed in capturing a village must not, however, be allowed to retard the progress of the troops on either flank, any gap which may be caused in the front when

the attack has passed beyond the village may be filled by a fresh body of troops from the reserve

3 The town or village should be divided into areas for the capture of which separate sub units should be detailed. Each area in turn should be subjected to an intense bombardment before the infantry assault, and will be consolidated as soon as it has been captured, barricades will be erected on cross roads and all commanding buildings put in a state of defence

4 When tanks are employed in the attack the closest co operation is necessary between them and the infantry, owing to the ease with which the defenders can hide from the tanks. The location of any anti tank mines which may be discovered will be reported to tank units without delay

Large areas may often suitably be enveloped by infantry who protected by tanks on their inner flanks and if necessary by smoke advance on both sides of the defended locality to objectives beyond. The enveloped area may then be cleared by parties of infantry and tanks specially detailed for the purpose, adequate arrangements must be made to prevent bodies of infantry, attacking from different directions firing into each other

5 It will be important to maintain the momentum of the attack and allow the enemy no time to rally. Once a platoon has captured a locality, it will establish itself in the buildings which command the roads and open spaces and be ready to meet a counter attack, its place in the advance will be taken by another platoon which should pass beyond it and take up the fight

When moving down a street infantry should be preceded by an advanced party. Movement should be in single file on both sides of the street and close up to the houses, men being detailed to watch the windows and doors on the opposite side. A small rear party should be detailed to watch windows and doors after the others have passed. In this type of fighting smoke and H E grenades can often be used most effectively.

6 It may be necessary to use light or field artillery in close support of the infantry when the fire of the defenders is preventing access to a street. To be effective the guns will usually have to be employed at very short ranges.

39 *The defence of villages*

1 A town or a village should be allotted a complete formation or unit as its garrison.

2 Villages even after they have been destroyed by shell fire give a great deal of cover and shelter to the defence and are difficult to attack.

3 On the other hand small and poorly built villages without cellar accommodation may become shell traps. In such cases where the ground in front of the village can be covered by fire from the flanks it is advisable to site the forward defences to sweep the approaches with enfilade and oblique fire. By this means the village itself is used as an obstacle to break up the attack.

Fire positions should not be organized in rear of the village to prevent the enemy debouching from it.

At the opportune moment a counter attack can then be launched to eject him

4 In the case of a large village the forward defences should usually be sited in front of it, so as to escape the effects of a bombardment directed at its outskirts

Within the village defences should be sited in buildings which command roads and open spaces. Such buildings

Cross roads village greens and market squares should be specially strengthened by barricades or trenches on the near side to take advantage of the field of fire afforded. Localities or keeps, will also be organized for protracted defence and allotted a definite garrison, they will often prove of great value in breaking up an attack, and will also facilitate the re capture of the village by counter attack

A co ordinated scheme of anti-tank defence will be required. By means of demolitions, mines, etc., it may be possible to confine the enemy tanks to certain avenues of approach and thus simplify the task of the defence

5 The danger of disorganization in street fighting is great; subordinate leaders will retain control and keep their men in hand

Special report centres should be established at central points known to all the defenders.

CHAPTER VI

NIGHT OPERATIONS

40 *General principles*

1 The main objects in undertaking night operations are to effect surprise and to avoid observation and hostile fire

The range and power of attack possessed by modern aircraft have tended to increase the importance of night operations owing to the difficulty of concealing the movements of troops and their transport by day

Success in night operations depends largely on developing by training a night sense in all ranks. Troops accustomed to work at night acquire confidence which strengthens their morale and initiative and removes many of the difficulties at first experienced under conditions of darkness

2 The special responsibility of commanders in connection with night operations is to ensure that —

- i The plan is simple
- ii Thorough reconnaissance by day and if practicable, by night is carried out. All detailed arrangements must be worked out with the utmost care
- iii Every step to secure surprise is taken, special attention will be given to concealment of preliminary movements and preparations from air observation

3 Night operations may take the following forms —

i *Movements by night behind protective troops* —
These may be conducted to avoid observation, air attack or long range fire, or for climatic reasons

ii *Movements by night when the force is responsible for its own protection* in order to deliver an attack by night or on the following day, or to effect withdrawals unobserved

iii *Attacks by night* whether delivered after a night march or by troops already in position

4 Attacks at dawn are not included in the term night operations. The actual conduct of such attacks differs in no way from that laid down in Chapter II. For an attack at dawn the approach march assembly, and other preparations which are carried out during the hours of darkness are however governed by the instructions laid down in this chapter

NIGHT MOVEMENTS CARRIED OUT BEHIND PROTECTIVE TROOPS

41 *General considerations*

i Movements carried out behind the protection of other troops may involve —

i The move of units or formations to and from different parts of the battlefield : e.g. relief, movement of troops to their positions prior to an attack etc

ii The transfer of large bodies of troops from one portion of the theatre of operations to another

The danger of troops on the move, or in assembly positions, being discovered by flares dropped from hostile aeroplanes must be remembered

42. *Conduct of night marches*

1 In the reconnaissance for a night march the route should when possible be examined both by day and night. Points where checks are likely to occur, and the position of branch roads or of places where the column might go astray, will be noted and marked

If the march is to be made across country the route will be fixed by compass bearings. All landmarks which are visible by night will be noted and the distance between those that lie on the line of advance should be measured in order that the progress made may be checked. Where the country is featureless, it may be necessary to post men at certain points along the route, particularly at places where a change of direction has to be made. Men so posted will be given the compass bearing and the distance to the next post

If it is necessary to check distances an officer should be specially detailed for the purpose. The starting point will be clearly marked, the arrangements made being notified beforehand to all concerned

2 The regulation distances between units may, on very dark nights be reduced or omitted, but whenever possible it is best to retain them in order to prevent constant checks throughout the column. An officer will invariably march in rear of each unit, the pace must be uniform and touch maintained throughout the column. The hours and periods of halts will be arranged starting, no unit will halt until it has again

remainder of the advance is to be made will be adopted. If the advance is to culminate in a night attack, slight modifications in the formation to be adopted may be necessary when the troops arrive at the "forming-up place" (Sec 47, 4)

3. The distance between the assembly position and the objective will depend on the nature of the country, the enemy's vigilance, the possibilities of discovery and the composition of the force

Both in the case of a night advance, and of a night attack, as thorough a reconnaissance as circumstances will permit will be made of the ground over which the advance is to take place

Compass bearings will be taken and notified to all concerned

4 The rate of advance will depend on the darkness of the night. It is, however, unsafe to count on troops which are deployed moving in the dark faster than one mile an hour

The advancing troops will be preceded by detachments for local protection and ground reconnaissance; strong fighting patrols will be the best form of protection. If obstacles are encountered which cannot be readily traversed or removed, the troops will lie down until a passage has been cleared. Small parties of engineers will accompany battalions to assist in clearing away obstacles and to supply technical assistance in the consolidation of the position

5 The instructions laid down in Sec 43, 3, regarding rifles, firing, smoking, and silence apply equally to night advances. If hostile patrols, scouts or advanced parties are encountered, they must be rushed in silence

with the bayonet without hesitation before they have had an opportunity to give the alarm

6 Should the enemy open fire during the advance from the assembly position to the forming up place, the advance will be continued deliberately until the forming up place is reached

45 *Night withdrawals*

1 When in close contact with the enemy a withdrawal can most easily be effected at night. The essential condition is to avoid confusion and congestion of the avenues of withdrawal

2 If the enemy does not discover the intention to withdraw until it is dark he will —

i Have great difficulty in organizing and setting in motion a pursuit

ii Be uncertain as to the extent of the withdrawal and will have to proceed with caution

On the other hand by the use of his artillery and machine guns against avenues of withdrawal he may greatly increase the confusion which is liable to occur

3 Secrecy is therefore of supreme importance and the following principles will be observed by the force withdrawing —

i Normal activity will be maintained as long as possible by forward troops and artillery and care taken to avoid any marked increase in firing which might tend to make the enemy suspicious

- i Troops holding the position will be withdrawn on a definite timed programme beginning with transport troops in reserve and such artillery as is not required to display normal activity
- ii Fighting patrols should be sent out at frequent intervals in order to drive in the enemy's patrols or keep them at a distance
- iv Forward troops will be the last to move. The foremost troops should be thinned out gradually and withdrawn in small bodies to the rear by the most direct routes. No attempt should be made to concentrate them until they are well clear of contact with the enemy. Some machine guns should be left in position until the withdrawal of the forward troops is nearly completed. Those selected for this purpose should be sited to fire on main avenues of approach to the position and must have good routes available so that they can be withdrawn rapidly at the required moment.

4 A carefully prepared time table is the basis of a well-organized withdrawal. The times laid down for the different phases must be scrupulously observed. The fact that a neighbouring unit has withdrawn must not make a unit hasten its own departure unless it receives a written or verbal order to do so from an officer with authority to give it.

NIGHT ATTACKS

46 *General considerations*

1 Night attacks may be undertaken in order to gain a point of support for further operations in daylight to

drive in the enemy's advanced troops, to capture an important position as a preliminary to an attack at dawn, or to surprise the enemy.

2. Night attacks have the following characteristics —

i. Surprise can be effected more easily than by day and may have greater results especially against troops who are not highly trained. A counter attack against a locality captured by the enemy just before dark undertaken as a night attack, has good prospects of success.

ii. The fire of the defence is unaimed, and it is almost impossible for the enemy to exercise fire direction or fire control.

iii. Observation from the air is difficult.

iv. It is almost impossible to manoeuvre at night. It is therefore unnecessary to dispose the attacking troops in much depth as it is difficult during the action to direct reserves against points where they are needed unless they are quite close to them.

v. Night attacks should rarely be attempted by a force larger than one infantry brigade against one objective. The objective selected must be limited well defined and easy to recognize in the dark. In the case of a large force deployed on a wide front several distinct objectives may be attacked simultaneously with advantage. The attacks of neighbouring units and formations are difficult to co-ordinate hence when the attack has been launched each body must be prepared to carry out its task practically independently.

- vi Exploitation of success by night is very difficult, and should be deferred until daylight, as the attempt to carry it out may lead to disorganization. Where conditions appear likely to be favourable for exploitation, the attack should be timed to reach the objective just before daylight. In other circumstances the attackers should be given two or three hours of darkness after the capture of the objective in which to consolidate (Sec 17)
- vii Owing to the objective being limited and to the difficulty of getting in the dark accurate information on which to base decisions the influence of the commander is almost wholly exerted in the care bestowed on the preparation of the attack
- viii The artillery has to fire according to a pre-arranged programme. The main weight of the responsibility for success in a night attack devolves on the infantry
- ix In a night attack against semi-civilized or ill-armed troops, some of the advantages conferred by modern weapons are forfeited

3 Unless protective troops in close contact with the enemy are able to prevent hostile ground reconnaissance, a night march over any considerable distance as a prelude to a night attack is inadvisable, except against an ill-disciplined enemy. Such an attack will, therefore, usually be undertaken from a position in close contact with the enemy.

47. *Organization and conduct of night attacks*

1 Once the decision to undertake a night attack has been made, the operation will resolve itself into five stages—

- i. Reconnaissance and preparation.
- ii. March to assembly positions
- iii. Advance of the assaulting troops from the assembly position to their forming up places
- iv. The assault.
- v. Exploitation or consolidation, or both

If the movement is being carried out behind covering troops, ii and iii may merge into one

2 *Reconnaissance and preparation*—Commanders of all sub-units down to rifle and machine gun platoons should view the ground over which the attack is to pass, a further reconnaissance should be carried out after dark, in order to locate any landmarks which may be visible and select suitable stars on the compass bearing. View points will be carefully selected and officers stationed at each one to ensure that the interests of secrecy are observed. Air photographs, vertical and oblique will be of value during the preparation of the attack. Compass bearings will be taken and notified to all concerned

Objectives should be so selected that they can be easily found at night. It will be of assistance if they show up against the night sky and for this reason it is often an advantage to attack up hill. It will be essential that the key locality or localities of the hostile position should be captured. Ground between localities can be taken up and then dealt with from the flanks.

of main objectives should not rest on ground which in daylight will be overlooked by the enemy from a flank.

Distinctive marks such as a white arm band should be worn by all ranks

3 *Assembly positions* (Secs 42, 4 and 44, 2) — When there are no covering troops in front adequate protection will be required for the assembly positions

The orders for the attack will usually have been explained to all concerned beforehand. In any case before the troops move off from their assembly positions to the forming up places it is essential that the more important points should be clearly explained to all ranks so that everyone may know —

- i The object in view the direction of the objective and its distance from the forming up place
- ii The formation to be adopted at the forming up place
- iii The part he has to play
- iv His action in case the enemy is not surprised

Rifle platoon commanders will also satisfy themselves that the men fully understand the following instructions —

- v Rifles will not be loaded but magazines will be charged. No man is to fire without a distinct order
- vi Until daylight, bayonets only will be used in the attack
- vii Absolute silence will be preserved, there must be no smoking talking coughing rattling of equipment, etc nor will the flashing of electric torches be permitted

viii If obstacles which cannot be readily traversed or removed are encountered, the troops will lie down until a passage has been cleared

Watches will be synchronized at the assembly position and compass bearings checked

4 *Advance to forming up places*—Many of the points referred to in Sec 44 are applicable to this movement. The forming up of the troops for the attack requires very careful organization to ensure that it is conducted noiselessly and without confusion. The forming up place should be as near the position to be assaulted as is consistent with the necessity of avoiding detection by the enemy and the maintenance of secrecy. It must be easily recognizable and if no natural landmarks are available it will have to be marked by tapes or wire. If tapes are used they must not be placed in position in daylight as they can be seen from aircraft.

Troops should reach their forming up places fresh and in time to allow of a *short* halt before the attack begins; during this halt leaders should verify their positions and the line of advance.

The degree of deployment during the advance will depend on the circumstances of each case. A formation in small columns is more flexible than line, ensures better control, is better for crossing rough ground and obstacles, is less vulnerable to unaimed fire and is easy to deploy from. In each platoon column the rifle sections should lead, the distance between columns should be such that each can see the next one to it.

Protection and maintenance of direction will be important. Leading rifle companies should be preceded by officers patrols who will be responsible for

the best line of advance for their respective companies, and for dealing silently with any hostile scouts, advanced parties or patrols that may be encountered; these patrols will subsequently cover the deployment of the battalion on the forming up place, and will rejoin their respective companies before they move forward to the assault

The pace will be very slow and arrangements made to ensure that columns keep closed up.

On arrival at the forming up place each platoon column will deploy

Should the enemy open fire during the advance from the assembly position to the forming up place, the advance will be continued deliberately until the latter is reached

5 *The assault*—The assault will be carried out in silence with the bayonet. The time that the forward troops of battalions leave the forming up place will be

troops forming front to a flank in order to face the enemy's fire, such action leads to loss of direction and impetus in the attack and tends to endanger parties especially detailed for flank protection

If, after the forming up places have been left, the enemy opens fire, all ranks must understand that it is their duty to press forward and carry through the attack, cost what it may. No movement to the rear will be permitted, even to correct mistakes which have been made

Artillery support, in the case of a force in close contact with the enemy, can be afforded by the guns already in action. Once the enemy is roused, artillery fire should be directed to protect the flanks of the attacking troops and against probable assembly positions, approaches, etc., well within the enemy's positions. When the night attack is a sequel to a night march, it will seldom be possible to arrange for artillery support unless the conditions are very favourable, e.g. time can be allowed for the artillery to come into action before the final advance commences, or at least the positions to be occupied by the artillery have been previously reconnoitred during daylight.

The task of the battalion reserve will be to hold a line behind which the assaulting troops can reorganize should they be driven back in confusion. Later it will be available to exploit success at daylight.

6 *Exploitation* — This should be deferred till daylight (Sec. 46, 2, vi). Any objectives not taken by night will be attacked again with adequate supporting fire arranged for the purpose. Ground between objectives will be dealt with as soon as it is light enough to see, battalion reserves may be suitably employed on this task, and tanks will prove of great value.

7. *Consolidation* — This will be carried out in accordance with principles laid down in Sec 17. The following points will be important —

1. The general line on which the forward posts are to be sited should be so selected that it can be easily found at night. Artillery and machine-gun support will be facilitated if this line clearly marked on the map and on the

-
- ii Thinning out, and organization in depth, must be the first task. Machine guns should be pushed forward quickly to give depth to the defence and to cover the ground between the various objectives.
 - iii Important localities should be wired before day light. The supply of engineer material, and its despatch to the required places by night, will require consideration.
 - iv Sites of the various headquarters must be determined beforehand. The efficiency of rapid consolidation will depend largely on the establishment of simple signal communications.
 - v Anti tank defence.

8 *Orders for night attacks* will of necessity, be detailed (Sec. 46, 2 vu). The importance of secrecy must always be borne in mind and details of the orders will not be communicated to the troops earlier than is absolutely necessary.

CHAPTER VII

AMMUNITION SUPPLY

48. *General principles*

1 The fundamental principle of ammunition supply is that ammunition must be passed systematically and automatically from rear to front to replace that expended in battle. Troops in action should never have to turn their backs on the enemy to fetch further supplies.

2 A commander's power of manœuvre is largely dependent on ability to keep his troops supplied with ammunition. Careful arrangements for ammunition supply must therefore form part of every plan, whether in attack or defence. Each echelon must be constantly aware of the position of and be in communication with, the echelon next in front of it so that the quantity and nature of the ammunition wanted can be sent forward promptly to the points required.

3 All expenditure from the various ammunition echelons must be replaced immediately.

49. *System of distribution in front of railhead*

1 The reserves of ammunition for infantry units held in advance of ammunition railhead are distributed in the following echelons —

- 1 The S A A sub-section of the maintenance company, R A S C (under corps control) which carries ammunition grenades, etc. from railroad to the divisional ammunition refilling points

- ii The S A A section of the ammunition company, R A S C, (a divisional unit) which replenishes from the S A A sub-section of the maintenance company at the divisional ammunition refilling points and delivers to the brigade ammunition reserve, if one is formed, or to the battalion ammunition reserve
- iii Brigade ammunition reserve This reserve is not a permanent organization, but its formation will be a normal procedure, a proportion of S A A vehicles being withdrawn from units as necessary
- iv Battalion ammunition reserve in first line transport vehicles and on pack animals
- v Company pack animals forming the company ammunition reserve

2 The amount of ammunition carried in the various echelons is subject to amendment from time to time, and may be found in war establishments

50. The S A A section of the divisional ammunition company

1. The S A A section of the divisional ammunition company carries the S A A, grenades and explosives for all units of the division It is equipped with medium 6-wheeled lorries

2. 2-4

supply.

3 Prior to an action the commander of the S A A section, or a sub-section of it, will —

- i Send forward a representative to ascertain the position of the troops he has to supply
- ii Send a motor cyclist orderly to the commander of each of the brigade ammunition reserves
- iii Send forward ammunition during the action as demanded by the commanders of the brigade ammunition reserves. The lorries conveying this ammunition will normally unload and return to the S.A A section as soon as possible

51. The issue from, and replenishment of, the battalion S A A vehicles and pack animals

1 The ammunition available in an infantry battalion is distributed between the man, pack animals, and first line transport vehicles

2 A brigade reserve under a selected officer, will normally be formed by detaching from each battalion as many of the S A A vehicles as the brigade commander may think fit. Vehicles containing machine gun S A A may be included in the brigade reserve if the brigade commander considers it necessary to retain control over a proportion of this ammunition

The brigade reserve forms a link between battalions and the S A A section of the ammunition company, although intended for the infantry brigade, in case of necessity it will supply ammunition to any troops engaged

It will not normally be formed until action is imminent

4. The S A A. vehicles remaining with each battalion, after the brigade reserve has been formed, will move in rear of the battalion and constitute the battalion reserve.

5 When a collision with the enemy is probable, a battalion commander may increase the number of rounds carried by each man of rifle sections from the battalion reserve, taking care to replace these issues from the brigade reserve. In deciding on the amount to be issued he will bear in mind the importance of maintaining the mobility and fighting efficiency of the men.

6 The ammunition pack animal allotted to each company will be placed under the charge of a selected

and, as soon as it is exhausted he will obtain a further supply from the battalion reserve

7 On deployment, ammunition vehicles of the

the battalion commander

8 The portion of the battalion S A A reserve not allotted to companies will be under the regimental serjeant-major or a responsible NCO, at the outset it will be retained in the hands of the battalion commander and will move as directed by him

The distribution in action of the battalion S A A

reserve will depend principally on the nature of the ground. The object is to maintain the power of replenishing the supply from the brigade reserve, whilst getting the battalion reserve as far forward as possible so as to facilitate the supply of the forward troops.

The responsibility for the reserve is placed on the officer in command of the reserve. He is responsible for the reserves. As the battalion ammunition vehicles become empty they will be refilled or exchanged from the brigade reserve under the direction of the regimental serjeant major.

CHAPTER VIII

WORKING PARTIES AND TASKS

(See Manual of Field Works (All Arms))

52 *Field engineering*

1 In modern war a large amount of skilled and unskilled labour has to be employed both in and in rear of the forward area if combatant troops are to develop their fighting capacity to the full

The skilled labour is provided by technical troops but the unskilled labour must if in the proximity of the enemy, usually be provided by troops whose primary duties are combatant

It will be important to observe economy in the employment of this unskilled labour in order not to dissipate the combatant strength of a force This principle will be observed only if steps are taken to ensure that —

- i The work is properly organized and supervised
- ii The workers understand what is required of them
- iii Every available means is used to economize their strength and energies
- iv No avoidable delays or difficulties due to lack of proper tools material or transport are allowed to arise
- v Adequate protective and administrative arrangements are made to secure the safety and welfare of working parties when going to and from work, and when at work

2 Field engineering may be divided into two classes —

- 1 Work for which units or formations other than the engineers are responsible This includes the construction by the infantry of its own defence works Such work will be carried out under the orders of infantry commanders who are responsible for the siting organization, and construction of the work Engineer assistance or supervision will be restricted to the supply of the necessary material and the provision of technical advice or minor assistance in technical details and this will be arranged by the commander ordering the work
- 2 Work for which the engineers are responsible This will be carried out solely by engineer units or by engineer units with the assistance of working parties from infantry or other units or by civilian labour

In the case of work of the second class and frequently also of the first class there will be two principal officers engaged in the work —

- (a) The engineer or other officer in charge of the work
- (b) The officer in command of the working party

3 The officer ordering the work is responsible for arranging for the provision of any protective troops that may be necessary

53 *The officer in charge of the work*

The officer in charge of the work will be responsible for —

- i Making the preliminary reconnaissance

- ii Tracing out the work
- iii Specifying clearly what the task is, how long it is to take and what tools will be required
- iv Demanding the working party and supplying guides
- v Supplying materials and extra tools if necessary
- vi The technical correctness of the design and for ensuring that the work is completed as designed

54. The officer in command of the working party

The officer in command of the working party will be responsible for —

- i Ensuring that his party has the proper tools and that these tools are in a serviceable condition
- ii The disposal of his men on the work
- iii Issuing and enforcing all orders as regards the carrying of anti gas respirators smoking lights etc
- iv The diligence of his men and for the completion of the work in the time allotted and in accordance with the design explained to him
- v Deciding whether in the event of serious casualties being incurred by his working party, it should be withdrawn temporarily or an attempt made to carry out his task at all costs. If heavy casualties are anticipated, the commander who orders the work must give definite instructions as to its urgency

55. The officer in command of the covering party

The officer in command of the covering party responsible for its tactical disposition for protection

that no party has to wait while another is being put on its task.

58. *Distribution on the work*

1 Two suitable methods of distributing parties on to excavation work are as follows —

i *Extending a working party from the left* —An officer or N C O prepared to pace or measure out each man's task, will stand at the left of the line on to which the squad is to be extended. The squad will be marched up in single file, at right angles to the line and the leading man will halt when two paces from the officer or N C O. The latter will indicate the left of the task, and will pace out the tasks along the line of the work. The second and remaining men will wheel to the right until opposite the left of their tasks, when they will wheel to the left and halt.

ii *Alternative method* —The leading man goes right through to the far end of the work and the remainder space themselves out behind him along the line of the work. This method takes slightly longer than method i, but it is usually necessary to adopt it in front line work.

2 Further details regarding the above methods, together with instructions as to the issue, carrying, and use of tools, are contained in the Manual of Field Works (All Arms).

that no party has to wait while another is being put on its task.

55. *Distribution on the work*

1. Two suitable methods of distributing parties on to excavation work are as follows —

1. *Extending a working party from the left* — An officer or N C O, prepared to pace or measure out each man's task, will stand at the left of the line on to which the squad is to be extended. The squad will be marched up in single file, at right angles to the line, and the leading man will halt when two paces from the officer or N C O. The latter will indicate the left of the task, and will pace out the tasks along the line of the work. The second and remaining men will wheel to the right until opposite the left of their tasks, when they will wheel to the left and halt.

2. *Alternative method* — The leading man goes right through to the far end of the work and the remainder space themselves out behind him along the line of the work. This method takes slightly longer than method 1, but it is usually necessary to adopt it in front line work.

3. Further details regarding the above methods, together with instructions as to the use of tools, and use of tools, are contained in the *Manual of Field Works* (All Arms).

59. *Allotment of tasks*

1 Work may be carried out either by —

i *Task work* i.e. a definite amount of work is given to each company, platoon, section, or individual

ii *Time work*, i.e. the working party is required to work for a certain number of hours

2 Task work should be given whenever possible and each party must be allowed to withdraw as soon as it has completed its task

3 It has been proved that the best work is got out of a working party in four hours—after that period the men tire rapidly

4 *Intensive digging* —The number of tools available, especially in mobile operations, will often be insufficient. In such cases it may be advisable to double man the tools.

CHAPTER IX

ASSAULT BRIDGING

(See Manual of Field Works (All Arms))

60 General considerations

1 Infantry will frequently be required to force the passage of a water obstacle when in contact with the enemy

For this purpose the engineers of the field army carry assault bridge equipment consisting of a trench board footway on floats but the infantry must be prepared to exploit all other means available for crossing the obstacle such as rafting and ferrying

2. It is the duty of the engineers to transport and deliver the equipment as far forward as their mechanical vehicles are able to go and to maintain the bridges when

3 Once the commander of the unit or formation concerned has decided on the areas for the bridges and where they are to be put together the infantry officer responsible for carrying forward and launching each bridge will carry out detailed reconnaissances for the selection of the actual points of passage

4 Surprise is the essence of success and governs

all preliminary steps taken prior to the launching of the bridges.

Preliminary reconnaissances and preparations must be concealed and every effort made to deceive the enemy : obvious crossing places which may be easily and quickly bridged are often more difficult to cross on account of hostile fire than wider or less easy places

The actual crossing is usually best carried out just before it gets light It is important however that the advance subsequent to the crossing should not have to be undertaken in the dark

These considerations however must not be allowed to cause undue delay, a daylight crossing may often be necessary

61 *Reconnaissance*

Information will be required on the following points —

- i Nature and width of gap
- ii Strength of current
- iii Nature and slope of banks
- iv " " " "
- v " " " "
- vi " " " " cover on
- vii Nearest suitable place for the bridge forming point (Sec 63)
- viii The route from this point to the point of passage
- ix If the stream is tidal the rise and fall of the tide and the hour of high and low water

iii Have a length of smooth ground equal to the length of the bridge

2. As the width of the gap can often only be estimated, and not measured accurately, the bridge should be made up longer than the estimated width, if too long, the spare bays can be detached when the forward end has been secured

3 For crossing by night, if the slats are not white-washed, tracing tapes should be laced along the outer edges of the trench boards

64. Carrying the bridge forward

1 When construction is complete the bridge may be lifted and carried forward as a whole The joints over

bridge as a whole, either on the centre or on either end

2 Carrying is effected either by hand or on the shoulders, the latter being preferable when the bridge has to be carried any distance. The bridging party should be sized so that no undue weight is placed on any individual, and care taken that all move together in the required direction without noise or confusion

If the bridge is carried on the shoulders, it must be lowered into the hands before it is launched.

The bridging party will carry arms and equipment, and should include men detailed as spare numbers.

3 The route or routes from the bridge forming point to the points of passage will be cleared and marked.

62. *Covering parties*

1 Covering parties will be in position before the bridges are put across, they should be allowed ample time for the movement and should not rush to their positions simultaneously with the bridging parties

2 It may be necessary for a portion of the covering party to be conveyed to the far bank before the bridge is launched. These men may have to swim, helped if possible by extemporized floats or they may have to be ferried across. In such cases the remainder of the covering party may be the first to cross the bridge once it is launched unless they are required in positions on the near bank

3 The crossing may be effected silently or covered by fire

Surprise will usually be best effected by not attracting attention by opening fire or by attracting the enemy's attention away from the points of passage, smoke may also be usefully employed

63. *The bridge forming point*

component parts of the bridge from the off loading point to the bridge-forming point. It should —

- 1 Be under cover from fire
- 2 Be as close as possible to the site selected for bridge

INDEX

A.

Advanced guard—	PAGE
— Action by general considerations	161 <i>et seq</i>
— Commander information to be supplied to	161
Deployment for action on gaining contact	53
"	156
"	156
"	160
"	157
"	207
"	162
"	163
"	156
"	3
"	158
"	3
"	27
— Unique, see —	47
A	
—	50
—	46 <i>et seq</i>
— of	3
—	156 <i>et seq</i>
Ammunition—	
— Battalion, distribution of	221
— " reserve movement of	78
— " S.A A reserve siting and control of	130
— Brigade reserve formation of	221
— Distribution in front of railhead	219
— Exhaustion of use of bayonet	4
— Light automatics restricting expenditure of	14
— Machine gun care necessary with	222
— " dumping of when authorized	22
— " precautions to prevent heavy expenditure	1
— " supply	
— " guns in attack control of supply	

must keep watch above the highest up stream bridge to divert floating objects which might destroy the bridges down stream

3 The leading troops detailed to cross the bridge will remain under cover until it is secured and ready for use, arrangements being made to communicate this information by a pre arranged signal. In crossing troops will proceed at a walking pace

67. *Traffic control*

1 The importance of good traffic control cannot be over emphasized

2 During assault bridging operations congestion is liable to occur, especially on the near bank. On the other hand, if troops are not fairly close up touch may be lost

3 A system of control posts and connecting files is necessary, in order to ensure that the forward movement of troops can be properly regulated and, if necessary, stopped altogether should the situation at the bridges demand it

An officer will be detailed to each bridge to ensure that the troops do not bunch in its immediate vicinity before crossing.

4. Casualties occurring on the bridge should not be allowed to check the troops following in rear. Troops will take across such casualties as they can without checking their movement.

INDEX

A.

Advanced ground—

PAGE
161 *et seq*

161

53

156

156

160

157

207

162

163

156

3

156

3

Oblique use and nature of

27

47

50

46 *et seq*

3

156 *et seq*

221

78

130

221

219

4

14

222

22

precautions to prevent heavy expenditure

16

supply

17

guns in attack control of supply

	PAGE
Liaison—continued	32
— Good system necessary for success in battle	39
— Officer artillery responsibility for supply and duties of	32
— Officers use and duties of	
Light artillery—	35
— Attack role of in	35
— Characteristics of	35
— Command of	191
— Close country value of in	36
— Defence role of in	125
Light automatic—	163
— Anti aircraft defence use of in	13
— Characteristics of	66
— Section and rifle section distinction between	
Light signals—	141
— Guide for patrols use of for	48
— Intercommunication with aircraft use of	116
— Use of in defensive fire plan	

M

Machine gun company—	132
— Defence action in	90 <i>et seq</i>
— Preliminary action prior to attack	
Machine platoon—	92 <i>et seq</i>
— Attack general considerations in	136
— Defence command and control of in	
Machine gun section—	95
— Attack general action in	137
— Defence reconnaissance and duty of commander	
Machine gun(s)—	61
— Attack duties of in	222
— Ammunition care necessary with	61
— Battalions attacking control of	61
— <i>Brio de</i>	191
	17
	18
	18
	69
	133

INDEX

A.

101	PAGE
101	101
57	57
150	150
150	150
150	150
157	157
207	207
162	162
161	161
150	150
3	3
150	150
4	4
27	27
47	47
20	20
40	40
160	160
221	221
70	70
199	199
221	221
219	219
4	4
14	14
222	222
22	22
16	16
17	17
17	17

	PAGE
Ammunition— <i>continued</i>	
— Pack animal company movement of	223
— Supply general considerations	221 <i>et seq</i>
— general principles	213 <i>et seq</i>
Anti-aircraft—	
— Concealment from air	190
— Defence general considerations	186 <i>et seq</i>
	78
	188 <i>et seq</i>
	187
	143
	96
	considerations in
	100
	103
	19
— responsibility for	127
— Village fighting co-ordinated scheme necessary	202
Anti tank platoon—	
— Disposition and role of in defence	129
— Distribution of in attack	76
Anti tank weapons organization of	23
Approach march general considerations during	5 <i>et seq</i>
Armoured cars information obtained by nature and use of	3
Armoured fighting vehicles—	
	against
	6
	191
	10
	10
	4
Artillery—	
	125
	34
	131
	1 <i>et seq</i>
	71
	74
	69 <i>et seq</i>
	20
	125
	113
	100

	PAGE
"	41
"	105
"	10
"	71
"	53
"	38
"	33
"	164
"	38
"	39
"	102
"	108
"	40
"	217
" in fighting in woods	195
" form of in the attack	69
" Village fighting use of in	201
" Withdrawal co-operation with in the	174
Attack—	233
"	244
"	238
"	233
"	236
" case of	236
"	231
"	235
"	235
"	235
"	232
"	236
Assault definition of attack—	7
Assembly position—	
" Infantry selection of for attack on trench system	98
" Move to prior to attack	63
" Night operations use of	207
" Protection for and issue of orders for night operations at	214
Attack—	
" Aircraft general considerations	150 et seq
" Anti tank platoon distribution of	
" Artillery in role of	

Article	Page
69 et seq	77
7 et seq	75
192	192
8 et seq	75
	59
	26
	58
Platoon preparation for in darkness instructions	204
	7
	45
	37
	27
	57
	99
Maximum gun	90
platoon in	97
on in	93
	61
	38
	66
	210 et seq
	213 et seq
	75
from superior	62
Organized necessity for preparation of	56
trench system considerations	95 et seq
Plan preparation of important considerations	56
Platoon action during	89
Preliminary action details of	63
Preparatory action by battalion commander	75 et seq
Raid nature and purpose of	101
Reserves in use and role of	58
Rifle companies in action by	83
Tank launching of considerations	74
Tanks in, co-operation with	72
role of and action of infantry	44
Time required to stage determining factor	62
Villages general considerations	199 et seq

	PAGE
Attack—continued	
— Woods general considerations	194 <i>et seq</i>
— Working parties action in case of	228
B	
Bridging operations—	
— Assault general	231 <i>et seq</i>
— " responsibility for execution of	45
Barrage—	
— Considerations regarding	70
— Normal form of covering fire in attack on trench system	97
— Rate of moving factors governing	97
" "	124
" "	66
" "	124
" "	60
" "	120
— Sector in defence occupation of	121
Battalion headquarters—	
— Attack disposition of	78
— Defence organization and disposition in	130
Battalion intelligence section—	
— Consolidation of captured ground use of in	101
— Defensive position, reconnaissance by prior to occupation	121
— Duties in defence	128
— Duty of in gaining of contact	55
— Employment of when at rest	179
— Function of in attack	75
Battle—	
— Conditions of factors affecting	1
— Co-operation during means to ensure	4
— Defence, in general considerations	119 <i>et seq</i>
" "	130 <i>et seq</i>
" "	2
" "	30 <i>et seq</i>
" "	9
" "	29
— Phases of	5 <i>et seq</i>
— Protection during responsibility for	183
— Reconnaissance during, necessity for	4

Battle—continued	PAGE
— Success in determining factors	4
— Troops allotted to post or locality responsibility for	108
	143
	13
	4
	233

C

Characteristics—	
— Artillery general	34
— Attack in close country	192
— Grenades general	14
— Leader to be successful in war	29 et seq
— Light artillery	35
— automatic	13
— Night attacks	211
— Rifle and bayonet	13
— Close country explanation of term	191
Command—	
— Artillery general considerations	34
— Decentralization of necessity for	29
Compass—	
— Bearing in wood fighting use of	195
— Close country fighting use of in	193
— Night attack use of	213
— marches, use of	205
Concealment—	
— Air, principles of in anti aircraft defence	190
— Defence from air and ground observation necessity for	105
— Machine guns considerations	18
Consolidation—	
— Captured ground steps necessary for	99
— Night operations general	217
— Object of considerations	7
Control—	
— Attack by battalion commander arrangements to ensure	5
— Attack methods of maintaining	60
— Close country difficulty of in	101

	PAGE
Control—continued	
— Close country important considerations affecting	191
— Company in the attack considerations	67
" " "	104
" " "	94
" " "	()
" " "	273
Co-operation—	
— Aircraft general considerations	46 et seq
— All arms alone enables infantry to confirm victory	"
— Artillery and machine guns to be the closest	25
— " in defence	125
— " in the attack details of	63 et seq
— " in the gaining of contact	54
— " in withdrawal	174
— " of special importance	14
— Attack, all arms in necessity for close	50
— Cavalry considerations	33 et seq
— Close country difficulty of in	121
— Effecting necessity for knowledge of other arms	"
— Engineers general	43
— Other arms necessity for	9
— Tanks general considerations	42 et seq
" " "	72
" " "	120
" " "	104
— " special troops for	106
" " "	147
" " "	145
" " "	109
" " "	145
" " "	118
" " "	147
— Withdrawal considerations	175
Counter preparation fire, nature and use of	114

D

Defence—	
— Aim of in defensive action	104
— Anti tank, forward area organization of	39
— Artillery in co-operation	"

	PAGE
" " "	40
	106
119 <i>et seq</i>	131
99 <i>et seq</i>	194
103 106	130
	37
103 <i>et seq</i>	38
132 <i>et seq</i>	148
	143
	38
	126
	148
	8
	122
	108
	148
137 <i>et seq</i>	
141 <i>et seq</i>	144
187 <i>et seq</i>	16
	11
	44
	125
201 <i>et seq</i>	148
	45
	111
	124
	143
	152
"	143
	111
	142
— Siting of co-ordination with fire plan	124

Defended localities— <i>continued</i>	PAGE
— Siting of factor affecting	115
— in defence	109
— Withdrawal from orders for	144
Defended posts, siting of co-ordination of	113
Defensive—	
— Action temporary considerations	104
— Attitude, circumstances necessitating	103
— Battle conduct of	130 <i>et seq</i>
	104
	107
	105
	115
Defensive operations—	
— Close country general considerations	193
— influence of on	191
Defensive position—	
— Attack on uncertainty of when or where action	113
	194
	110
	112
	112
	118
	112
	110
	107
	108 <i>et seq</i>
	110
	173
	4
Distribution—	
— Ammunition in the field	219
— Anti tank platoon in attack	76
— Battalion headquarters in the attack	76
— in the attack	68
— First line transport	77
— Forward rifle companies in attack	82
— Machine guns in the attack	68
— in the defence	116 <i>et seq</i>
— Rifle companies in the attack	67
— company in defence	1

Distribution— <i>contin ed</i>	PAGE
— Rifle company in reserve in defence	138
— Stretcher bearers to battalion area	77
— Troops in defensive position	110
— protracted defence	149
— Working parties general arrangements	228 229
Divisional ammunition company movement of	270

E

Enemy surrender by important considerations	9
Engineers—	
— Co-operation th general	45
— Command of during an attack	45
Equipment—	
— Assault bridging nature and use of	251
— Patrols considerations	141
— " " "	185
— " " "	143
— " " "	41
— " " "	4
— " " "	17
— " " "	217
— " " "	60

F

Field artillery—	
— Attack employment of in	37
— role of in	34
— Defence employment in	37
— " " "	125
— " " "	36
— " " "	37
— " " "	276
— " " "	45 225 <i>et seq</i>
— " " "	220 248
— " " "	230
— " " "	227
Working parties command of	
Fire—	
— Artillery affecting defensive dispositions	105
— " and machine gun relative capabilities of	25

Fire—continued	PAGE
— Classification of, in defence	114
— Control method of exercising	24
— Co-ordinated schemes alternative, necessity for in defence	113
— Co-ordination of artillery and machine gun responsibility for	26
— Covering support in attack, arrangements for	26
— " when launching infantry to the attack	38
— Discipline meaning of	23
— Modern war the dominant factor in	23
— Predominant factor in modern war	104
	-- 24
	-- 18
	24
	111
Fire plan—	
— Approach march when necessary	7
— Defence not to be prematurely disclosed	106
— Defensive framework of	115
	112
	71
	37
	61 70
	77
— Defence disposal of in	-- 130
Flags of truce, how to be regarded	5
Flank guard(s)—	
— General considerations in use of	164 et seq
— Protection of from raids	166
— Reconnaissance necessity for	164
— Strength of factors affecting	8
— Wooded country use of in advance	197
— Flares, use of for communicating with air observer,	49
Formations—	
— Tactical responsibility for adoption of	-- 12
— Platoon, in attack considerations	86
Forming-up place—	
— Advance to night operation,	209 215
— Night operations	208, 209
— Selection of for attack on trench system	97

— Main attack factors affecting 58

G

Gas use of by enemy anticipation of precautions 28

Gaining contact—

— Forward infantry role of when 53 *et seq*

— Intelligence sections role of when 55

— Mounted troops role of when 52

— Rifle companies role of when 55

Grenades characteristics and use of 14 *et seq*

" 68

" 11

" 73

" 48

" 49

" 28

" 151

H

" 14 *et seq*

" 206

" 114

" 75 *et seq*

— Defence duties in 128

Headquarters—

— Battalion personnel disposal of in attack 77

— Battle selection of considerations 30 *et seq*

— Platoon position of 87

— Siting of with those of the artillery 38

Health, care of in protracted defence 149

L		PAGE
Identifications	use of raid for obtaining	101
Infantry—		
— Employment of in battle	general principles	9 et seq
— Weapons	general considerations	13 et seq
		156 et seq
		6
		232
		191
	n ts of	62
		53
		120
		56
		3
		72
		3
		32
		5
		79
		101
		131
		2
		18
		3
		129
		164
		38
— Means of	acropplanes methods of	47 et seq
		33
J		
Judging distance	necessity for accuracy in	25
L		
Leadership	necessity for high qualities of	12
Leap-frog	method of attack nature and employment of	99
Liaison—		
— Arrangements for during battle	necessity for	4
— Artillery with	best arrangement for	38

<i>Liaison—continued</i>	PAGE
	32
	39
	32
	35
	35
— Command of	35
— Close country value of in	191
— Defence role of in	36 125
<i>Light automatic—</i>	
— Anti aircraft defence use of in	183
— Characteristics of	13
— Section and rifle section distinction between	86
" "	141
use of	48
	116

M

<i>Machine gun company—</i>	
— Defence action in	132
— Preliminary action prior to attack	90 <i>et seq</i>
<i>Machine platoon—</i>	
— Attack general considerations in	92 <i>et seq</i>
— Defence command and control of in	136
<i>Machine gun section—</i>	
— Attack general action in	95
— Defence reconnaissance and duty of commander	137
<i>Machine gun(s)—</i>	
— Attack duties of in	61
— Ammunition care necessary with	222
— Battalions attacking control of	61
"	61
"	61
"	191
"	17
"	18
"	18
— the attack	69
— Defence command and control of	133

	PAGE
role of	112
	135
	19
	68
and role of in attack	116 <i>et seq.</i>
Framework of defensive fire plan	115
Fire effect important considerations	22
details of	18
	54
	16
	18
	21 <i>et seq.</i>
	20
	19 <i>et seq.</i>
	22
	94
	118
	92
Positions factors affecting	23
in defence considerations affecting	134
Raids employment in co-operation	102
Rates of fire details	17
Roles of in the attack considerations	68
Section in the attack	92
Siting of by day, in defence	123
factors affecting	17
Support in attack on trench system form of	97
Withdrawal siting of in	171
Vanguard considerations when detailed for	159
composition of	160
routes, etc	32
	26
	26
	151
Message—	
Dropping means of communication, air to ground	47
Picking up means of communication ground to air	50
Messages, instructions regarding	32
Minefields, anti tank, use of in defence	127
Mobile troops, information by nature and use of	

	PAGE
Mounted troops—	157
— Advanced guards command and employment of	52
— Gaining contact role when	
N	
Night advance—	207
— Nature of	208
— Rate of movement	
Night attack—	214
— Distinctive mark to be worn by all ranks	210 <i>et seq</i>
— General considerations	213
— Orders instructions regarding	213 <i>et seq</i>
— Organization and conduct of	
Night marches—	207
— Advanced guard instructions for	208
— Conduct of when not protected	205
— Conduct of when protected	
Night operations—	207
— Assembly position use of in	216
— Assault conduct of	203
— Commanders special responsibilities of	204
— Forms of general considerations	214
— Instruction to be understood by the men	
— Movements carried out behind protecting troops	204 <i>et seq</i>
— general	203
— Objects of main	203 <i>et seq</i>
— Principles general	232
— River crossing considerations	209
— Withdrawals conduct of	
O	
Oblique (a)l—	162
—	60
—	80
—	57 <i>et seq</i>
—	192
—	83
—	67
— allotment of	81
—	3
—	213
— Night attack selection of	

	PAGE
" " " "	175
" " " "	195
" " " "	47
Obstacles—	
— Anti tank, unreconnoitred by enemy value of to defence	109
— Artificial in defence mobile operations	129
— Tank natural general	43
— Water forcing of	231
Offensive—	
— Resumption of conditions for	107
— Spirit necessity for in all tanks	2
Offensive operations—	
— Close country characteristics of attack in	192
— " influence of on	191
Orders—	
— Attack from superior commander	62
— Battalion for attack issue of	75
" " " "	128
" " " "	32
" " " "	235
— Company issue of	11
— Defence superior commander issue of	83
— Machine gun attack details for	120
— " in the attack issue of	91
— " defence issue of	94
— " platoon for attack issue of	132
— " defence issue of	94
" " " "	136
" " " "	218
" " " "	89
" " " "	151
" " " "	110
— Withdrawal, final issue of	32
Organized trench system attack on	174
Outpost position—	35 et seq
— Protracted defence development of	148
— Withdrawal from in defence instructions for	"

	PAGE
"	153
"	33
"	77
"	44
"	159
"	4
Smoke—	15
— Grenades characteristics and use of	69
— Indicating direction in attack by	41
— Screen weather conditions a varying factor in	
Smoke shell—	193
— Close country offensive use of for direction	40
Use of	
Starting—	97
"	37
"	74
"	97
"	201
"	77
Machine bearers allotment of to battalion area	
"	71
"	71
"	72
"	74
— flank attack protection of covering	
Surprise—	231
"	191
"	105
"	178
"	110
"	76
"	102
"	2, 153
T	
Tactics—	79
— Infantry bedrock of	191
— Influence of close country on methods	97
— Fuses use of for marking starting line	

Tank(s)—	PAGE
— Advanced guards use of with	156
	in 96 98
	42
	42
	191
	44
	42 <i>et seq</i>
	196
	176
	72
	44
	164
	42
	73
	200
Tasks—	
— Allotment of important considerations	58
— Artillery in defence nature of	125
	68
	119
	124
	135
	132
— Tanks allotment of guns required	73
— Working parties execution of methods	230
Time—	
	12
	62
	ents for 100
	236
	95 <i>et seq</i>
V	
Vanguard duties strength and composition of	158
Verbal reports and messages instructions	32
Villages—	
— Attack on general considerations	199 <i>et seq</i>
— Defence of general considerations	202
— Fighting in general considerations	192
Visibility from the air	190

W

1
1 *et*
7
13 *et*

Machine guns in siting of	1
Night conduct of	1 1 166 <i>et</i>

Woods—

Attack on general considerations	194 <i>et</i>
Defence in general considerations	1
Fighting in general considerations	1

Working parties—

Action in case of attack	22
Commander duties of	227, 22
Composition of details	22
Demand for and distribution of	228, 22
Protection for provision of	22
Tasks for methods of execution	23

Z

"Zero" the time infantry cross the starting line	5
Zone of fire defences organization of in defence	11
Zones, beaten, machine gun, considerations	1

Printed under the authority of H. M. MAJESTY'S STATIONERY OFFICE
by William Clowes & Sons, Limited London and Beccles.

PLATE I
N FOR A BATTALION
(DRAMMATIC ONLY)

forward using a covered approach
lealt with by fire

